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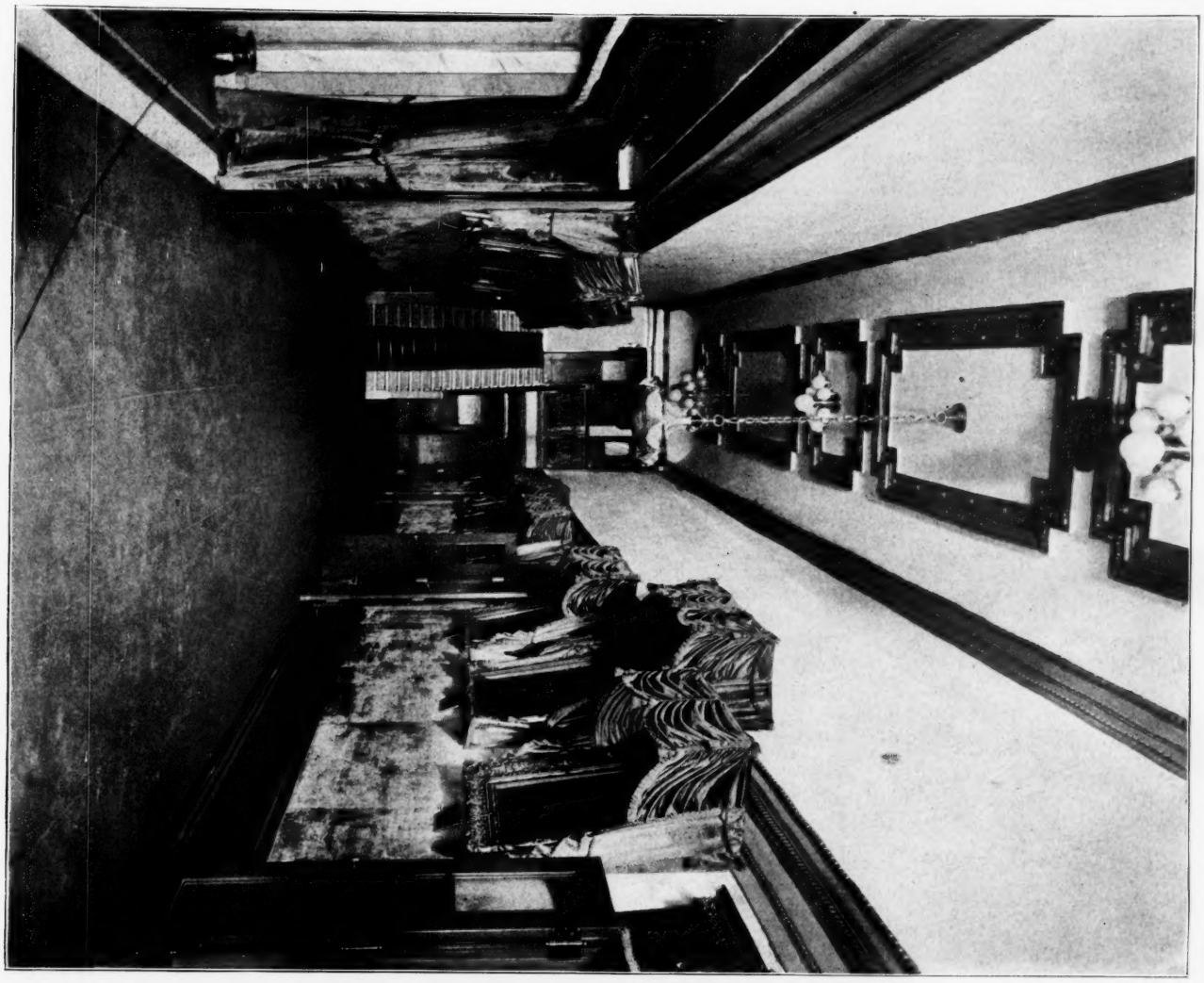

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Edmund R. Krause, Architect.

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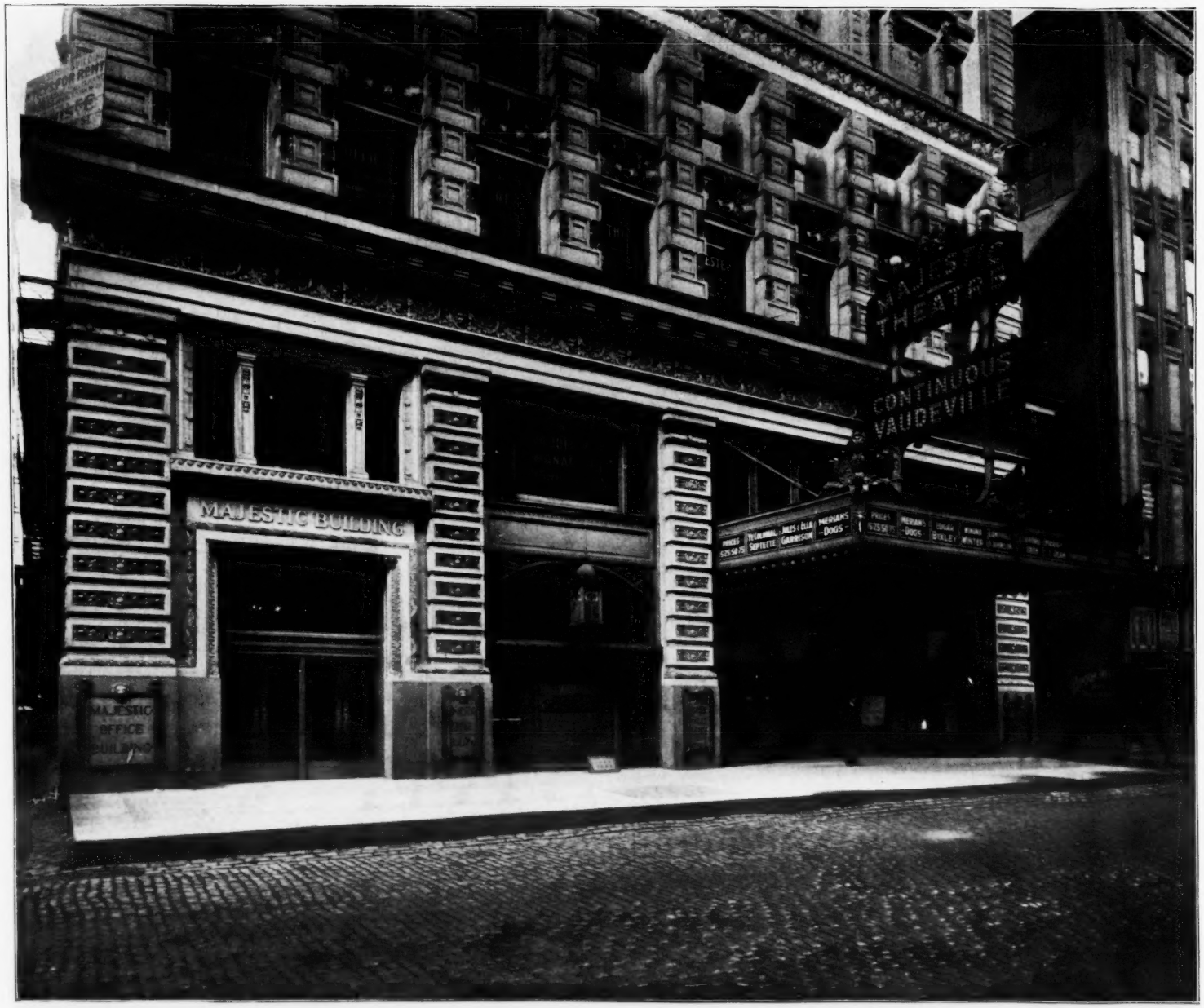

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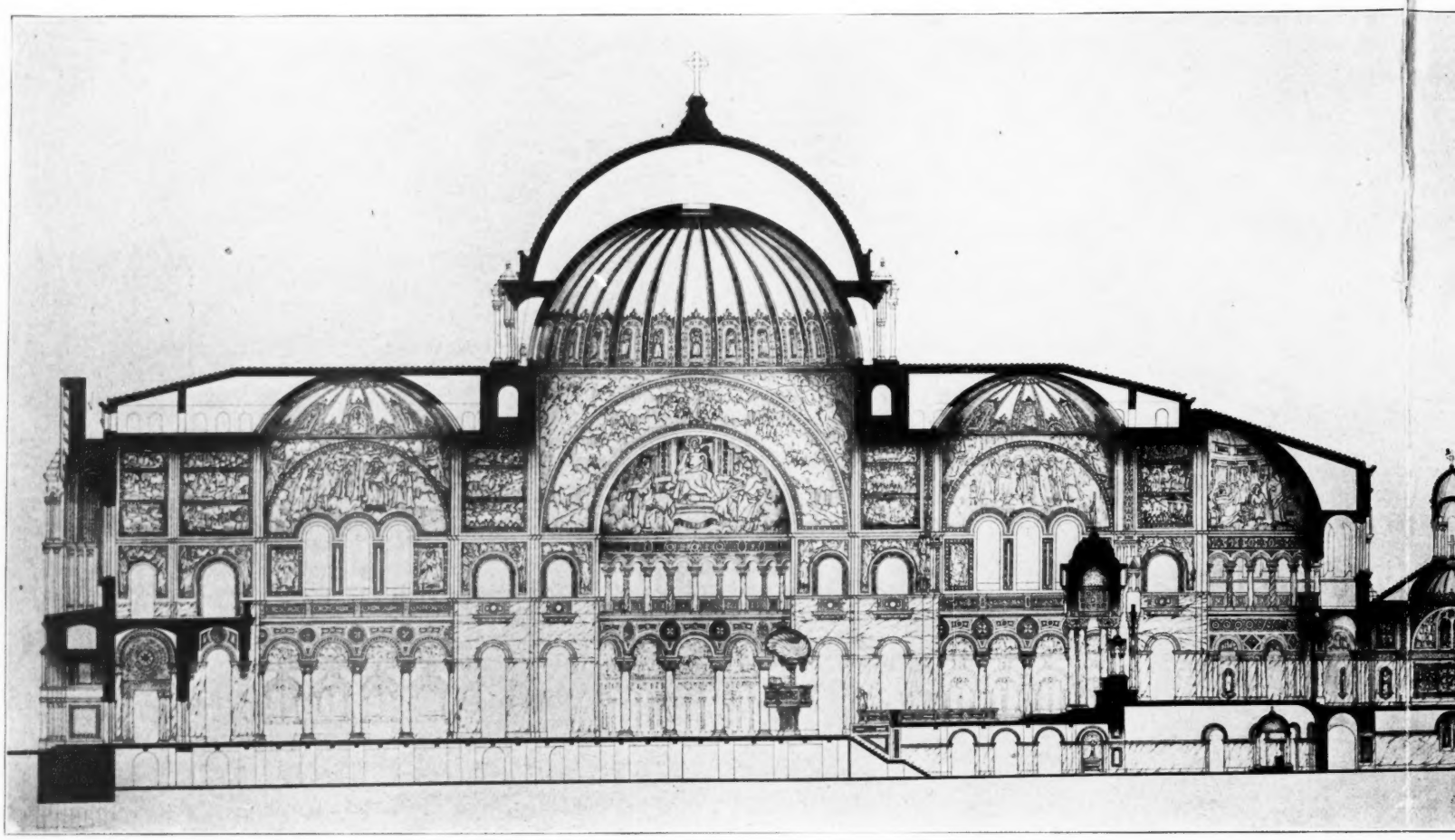

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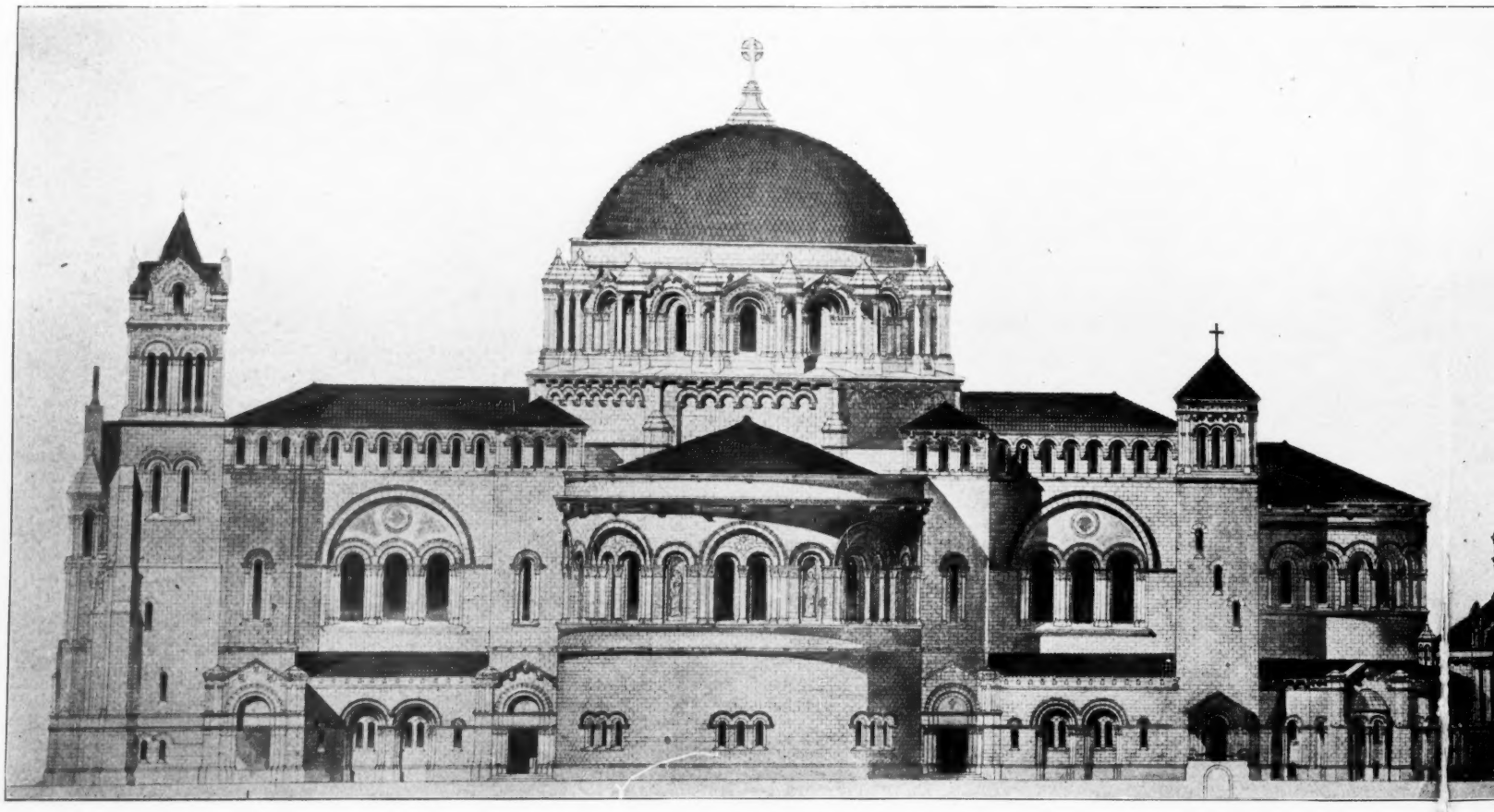

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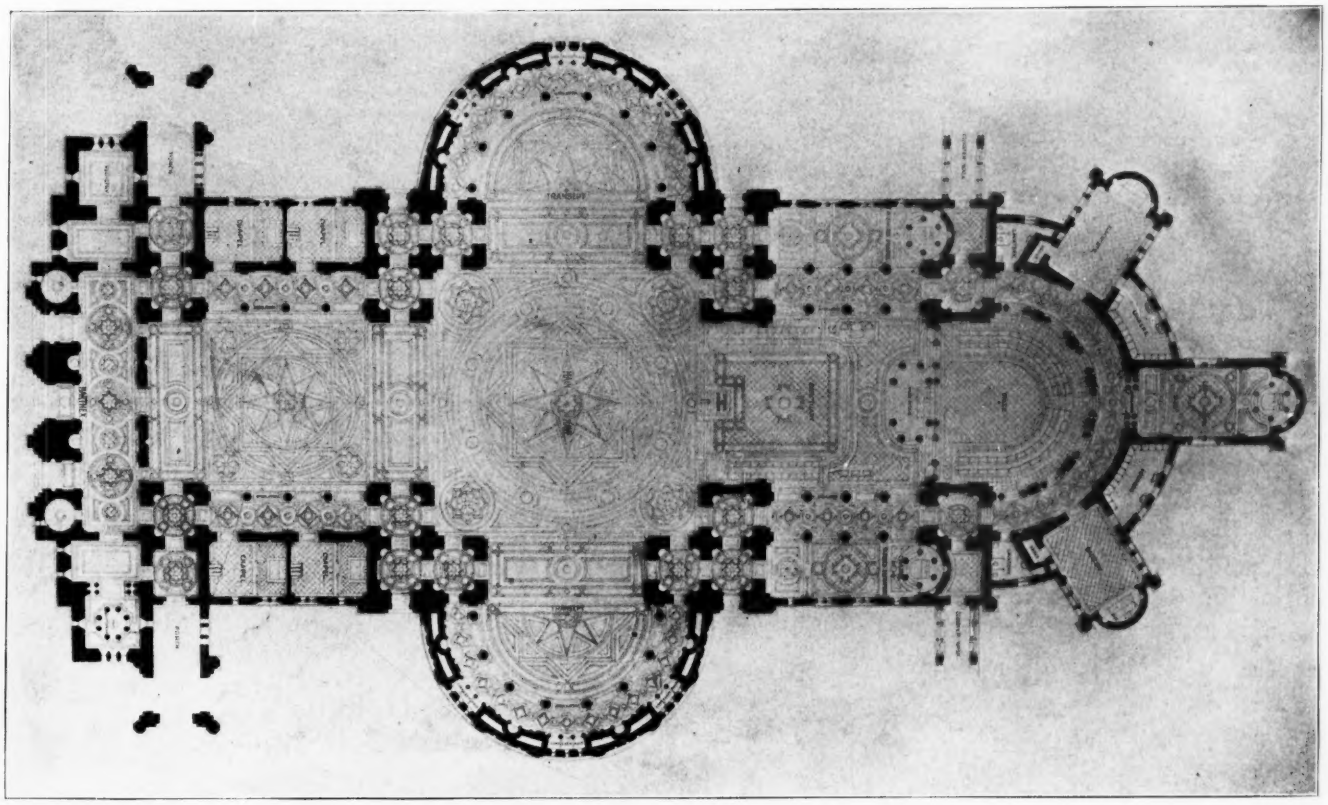

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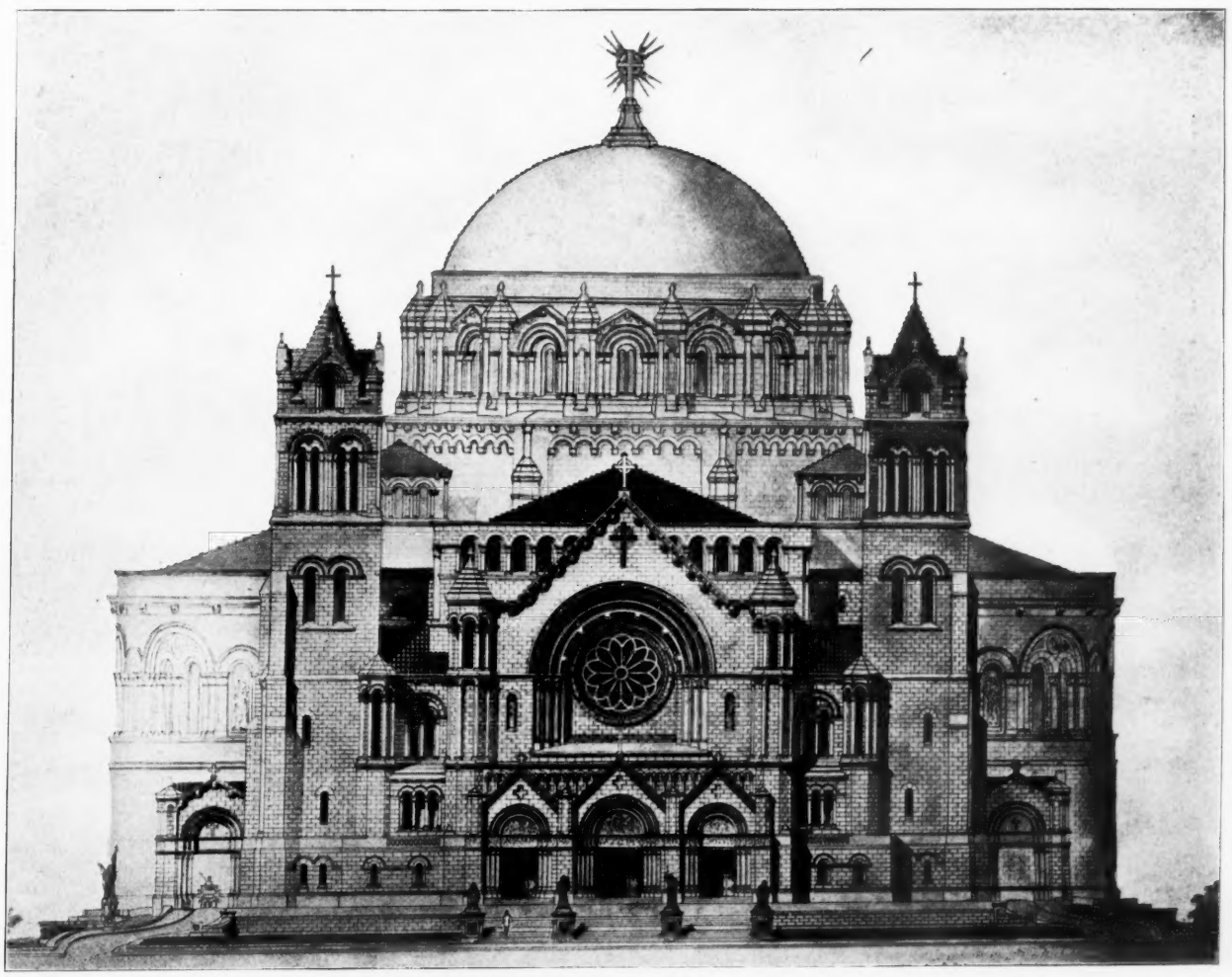

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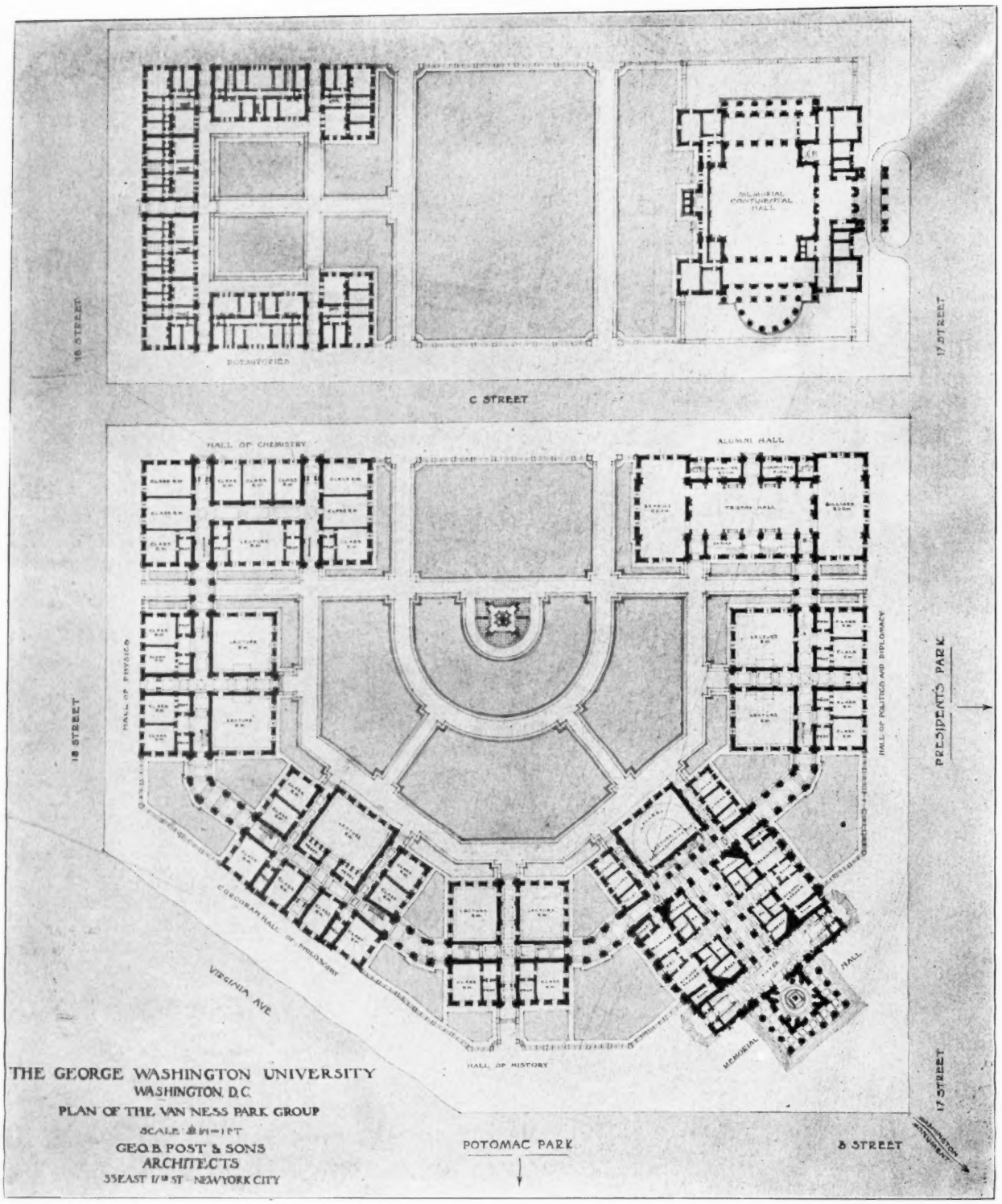
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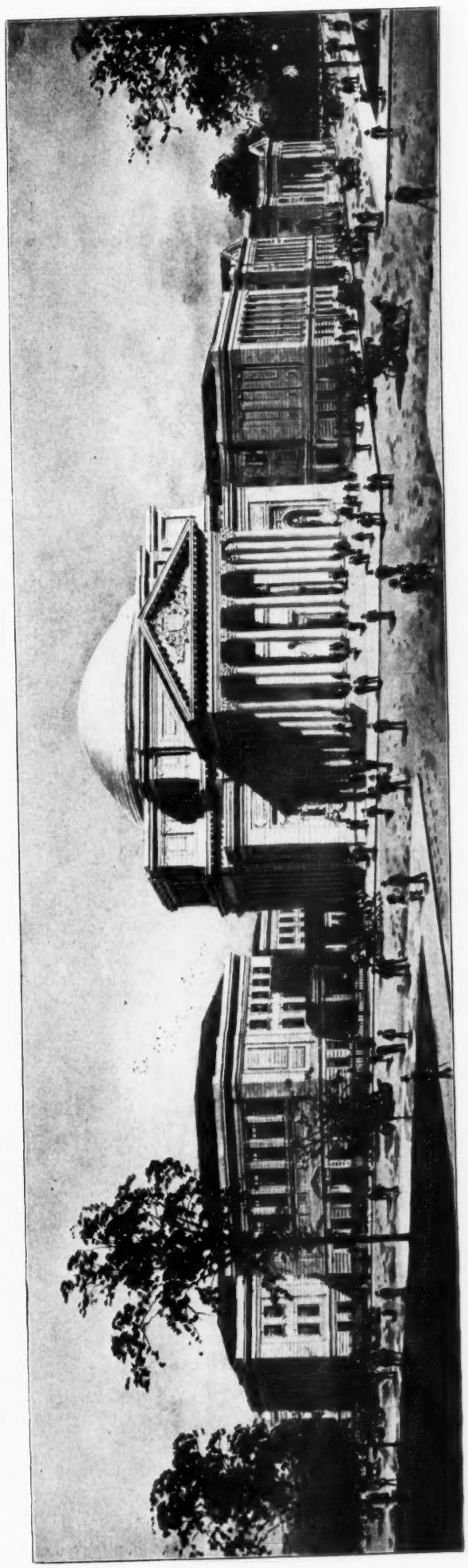

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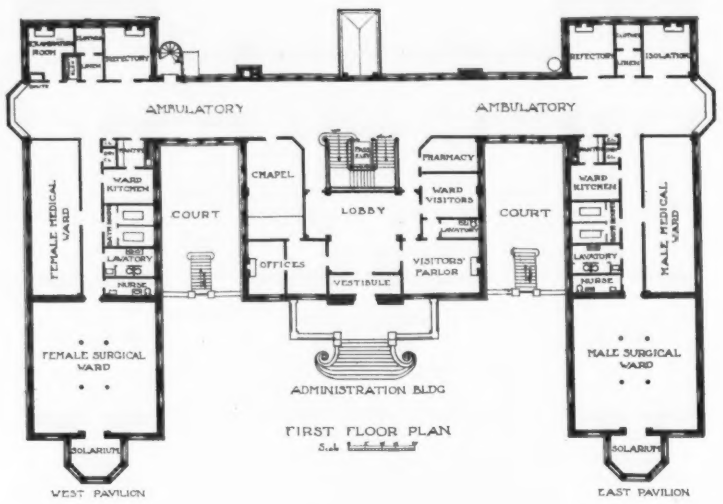

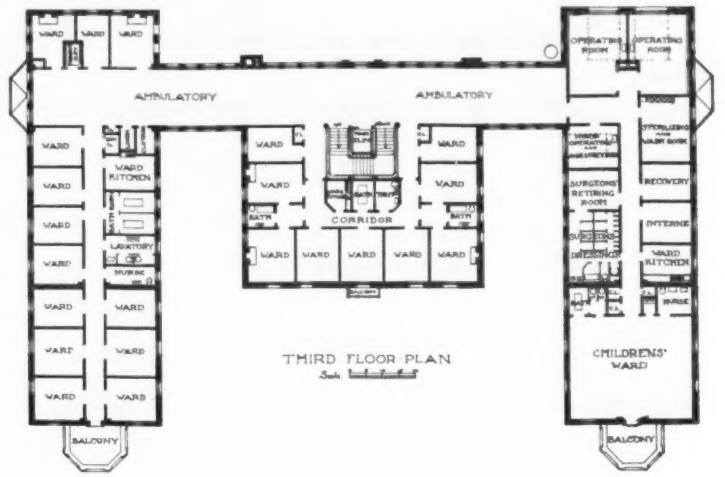

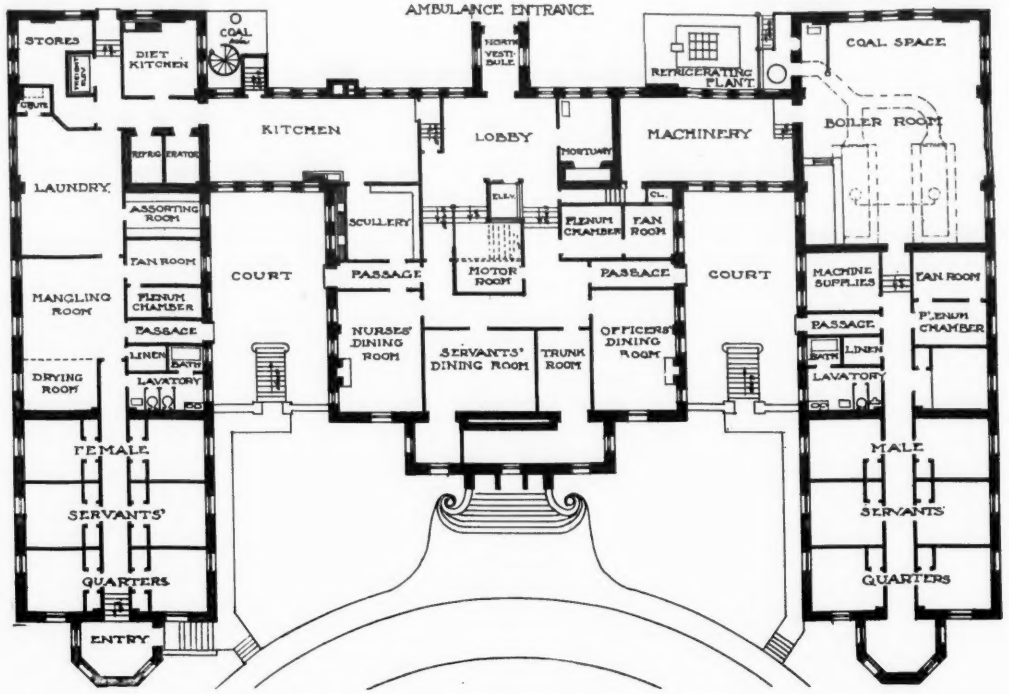

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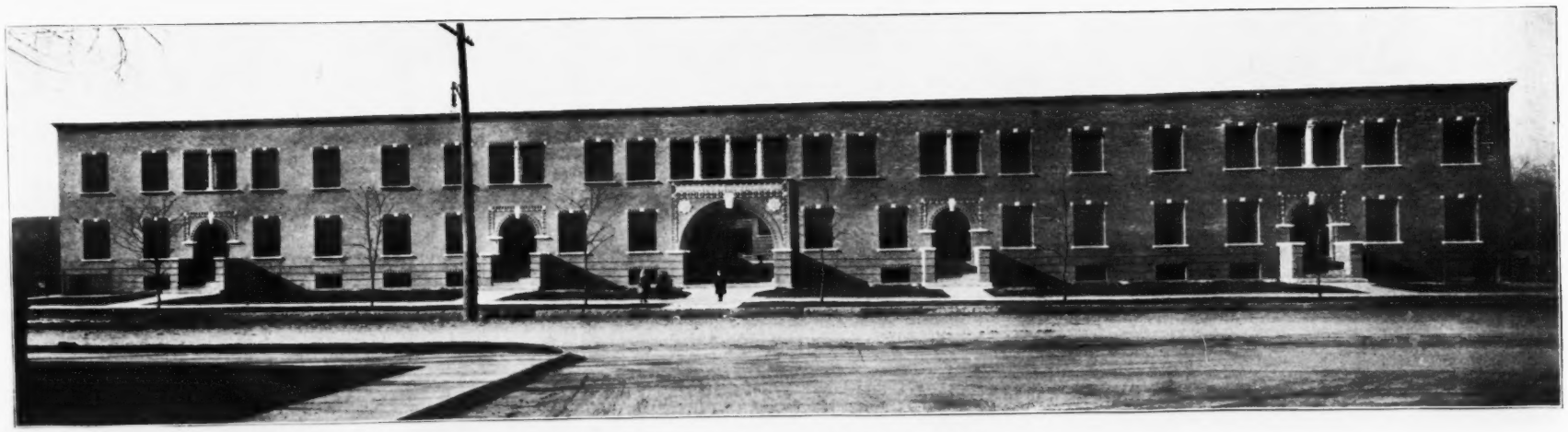

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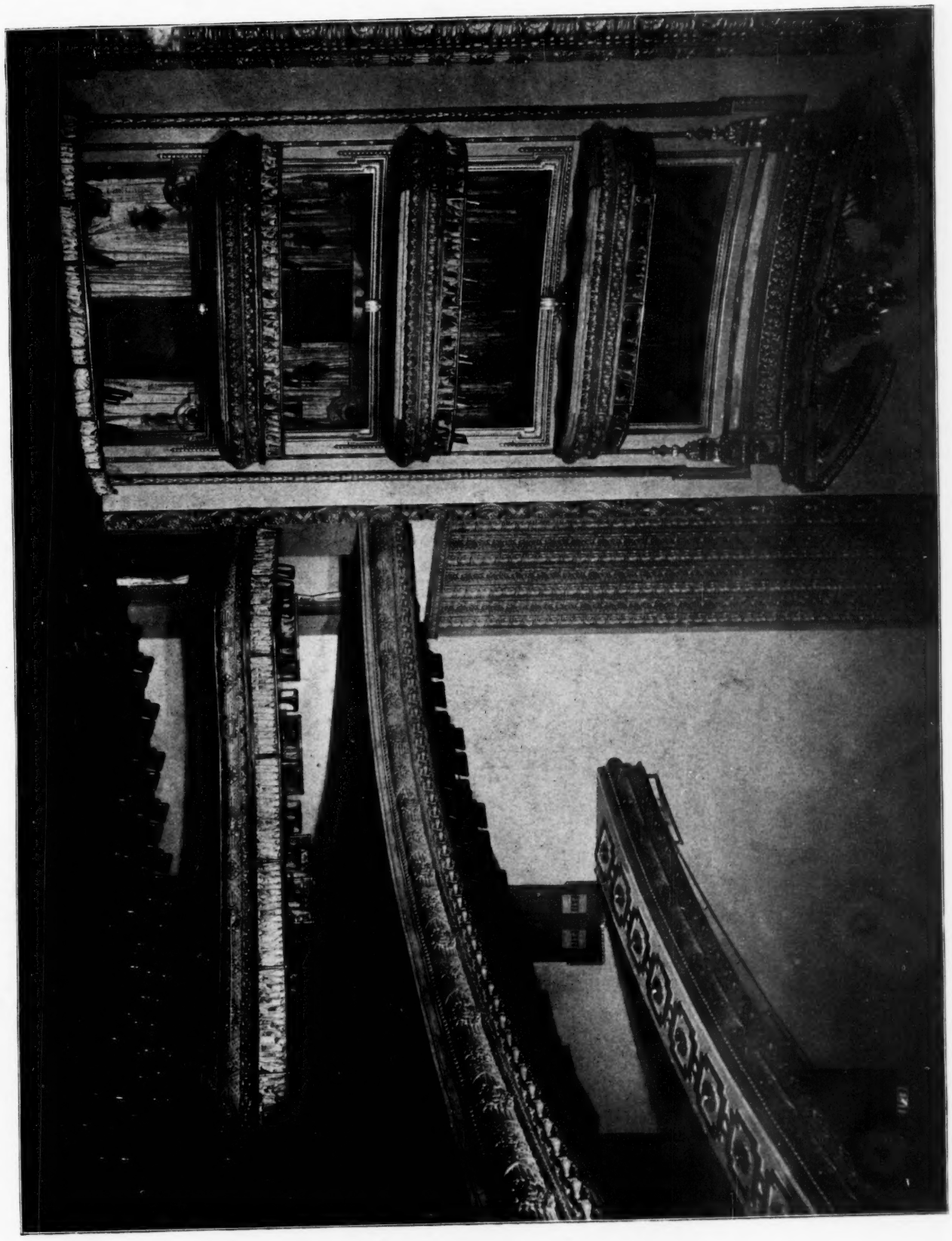

VIEW OF BOXES, MAJESTIC THEATER, CHICAGO.
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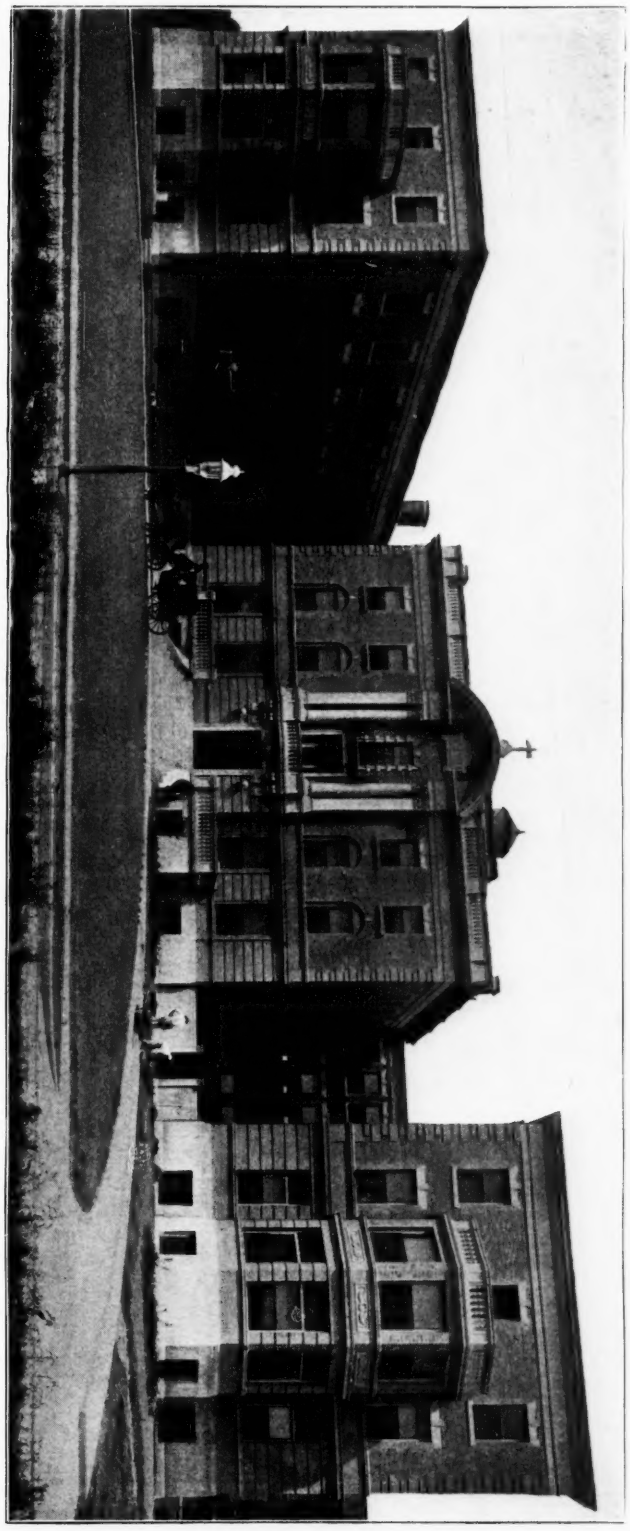

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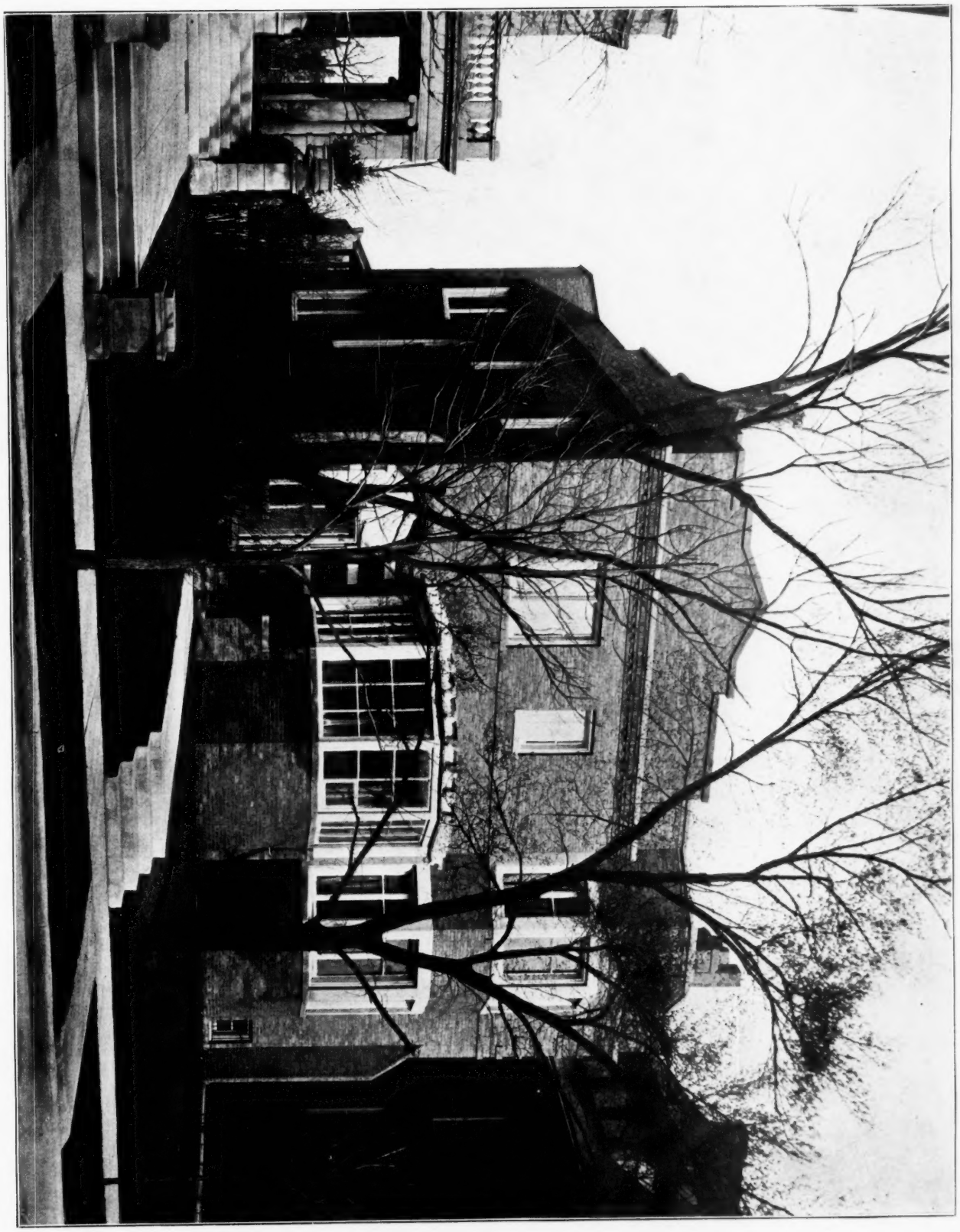

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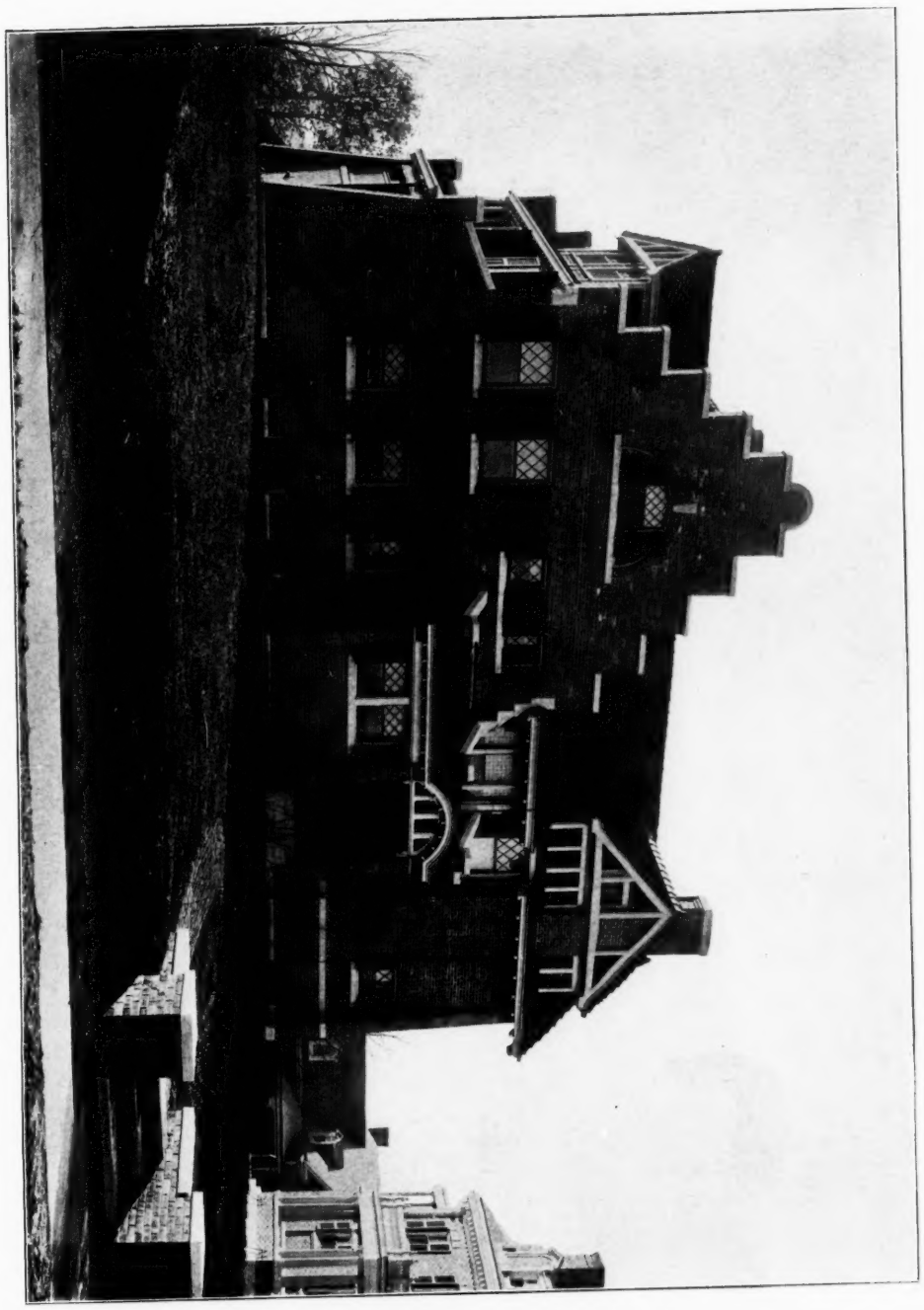

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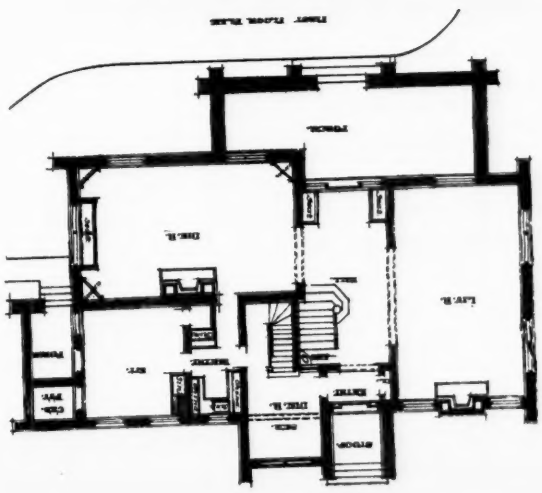

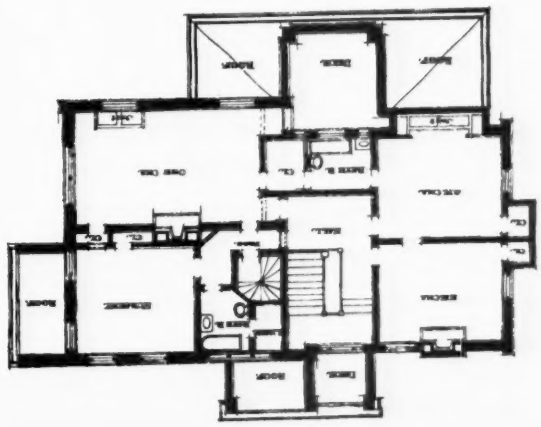

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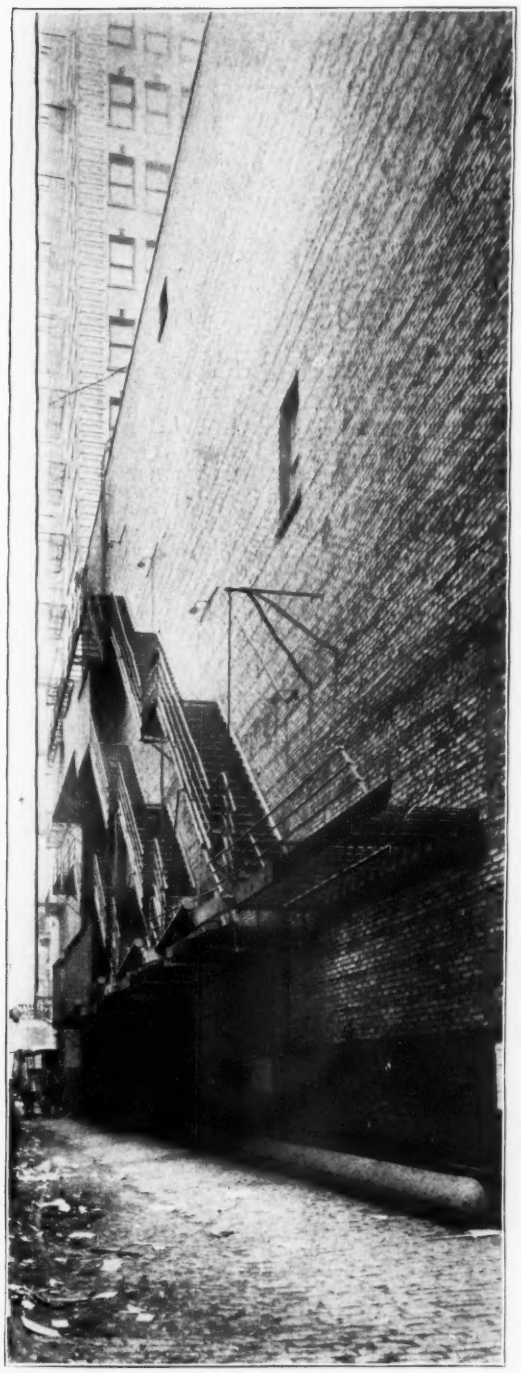

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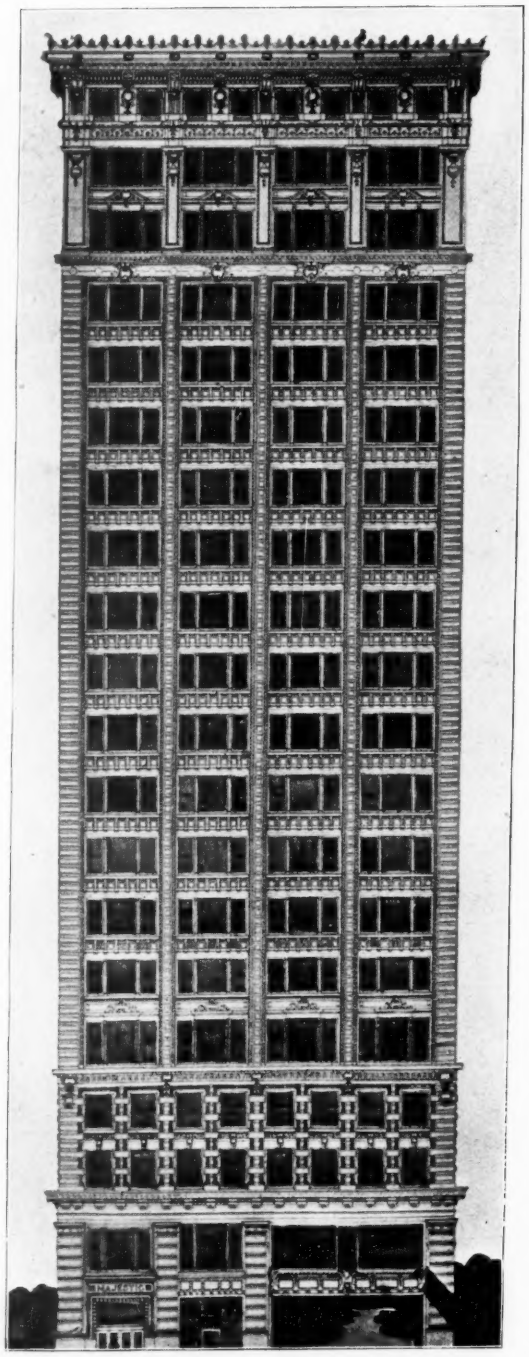

Facade, Majestic Theater Building, Chicago.
From Architect's Drawing,
Edmund R. Krause, Architect.

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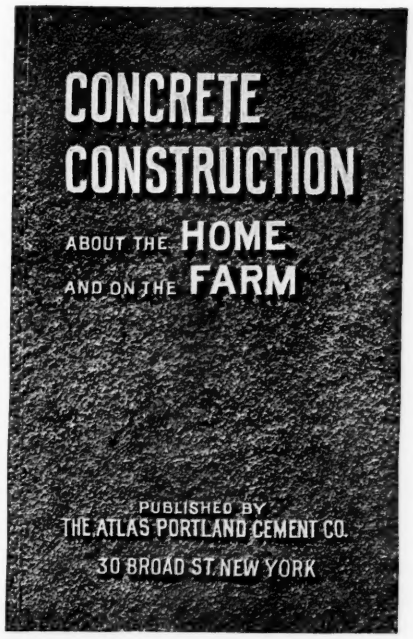

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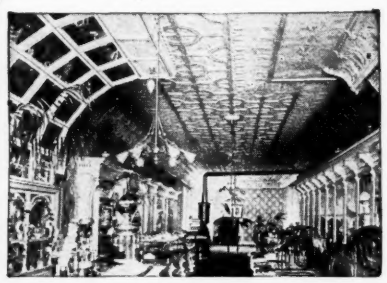

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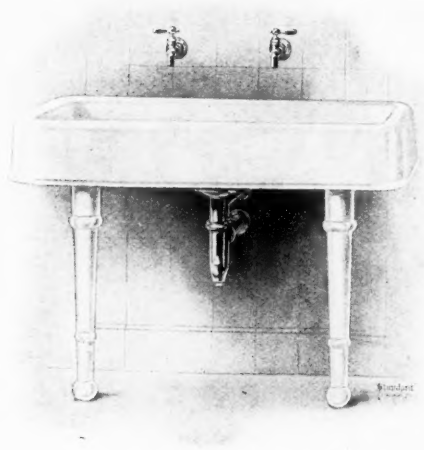

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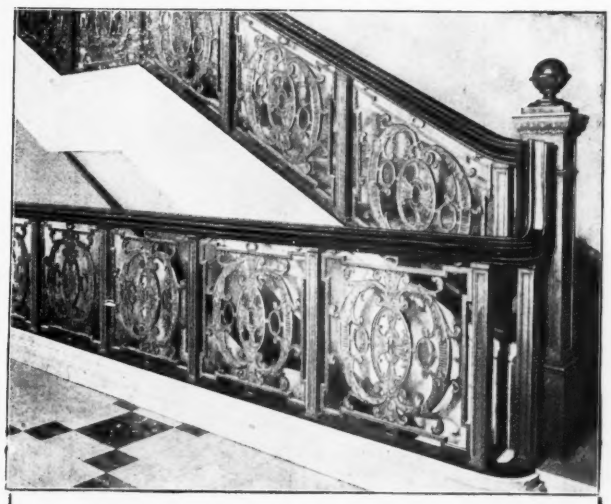

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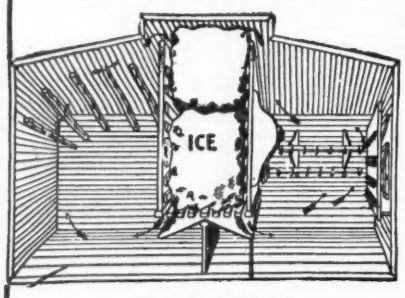

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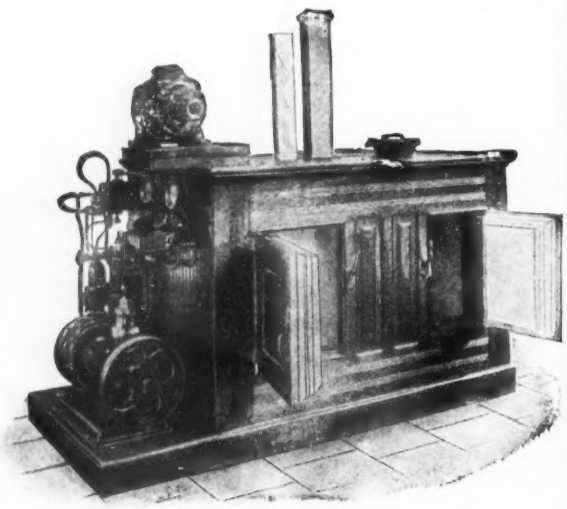

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VOL. XLVII. MARCH, 1906 NO. 2

THE INLAND ARCHITECT AND NEWS RECORD

A Monthly Journal Devoted to

ARCHITECTURE

CONSTRUCTION, DECORATION AND FURNISHING

ISSUED ON THE 15TH OF EACH MONTH

PUBLISHED BY PORTER, TAYLOR & CO.

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Theater Fire Protection.

The extraordinary attention that has been given throughout the world in the last year or two to protection from fire in theaters has resulted in the development of innumerable systems of construction and devices of more or less value. As the stage is the point of greatest danger, most of these inventions have been directed toward confining the flames to this part of the house. To determine how this may be best done, a series of interesting experiments has been conducted at Vienna. A theater building on a small scale was constructed with the usual stage appointments of scenery, hangings, and an iron curtain. The inflammable material about the stage was saturated with oil and ignited. With the ventilator openings over the stage closed the auditorium quickly filled with flame and gases, and the force from these was so great as to retard the working of the fire drop-curtain. This action was a close parallel to what happened in the disastrous fire in the Iroquois Theater at Chicago. So rapid was the spread of the flames and smoke in the Vienna test that an audience could not have escaped under similar conditions without loss of life. Another test was made with adequate ventilator openings over the stage thrown open. In this test the course of the flames was through the openings, and the fire was readily confined to the stage. The conclusions reached were that these ventilator openings over the stage were the simplest and safest protection possible against the spread of fire, and that the more of them that were used the better the result. Their efficacy would depend, of course, upon absolutely sure provision for their opening in case of need, and automatic control is recommended.

The Selection of an Architect.

In these days, when the public largely regards the position of an architect and his work as on a par with that of the contractor, and that to secure the best design for a building a competition is necessary, it is refreshing to find a man of intelligence and experience championing direct selection. This man is Elijah R. Kennedy, former park commissioner of Brooklyn, and his remarks are concerning the proposed competition for the municipal building. He strongly advises the borough president against such a competition. He says: "I am amazed that a man who is showing such thought, devotion to public interests and at the same time such good sense, should be misled on this matter. Of course, in making expenditures of public money you are accustomed to invite competition, because in building operations and grading, and all such affairs, this is the way to secure the best results at the least possible expenditure; but obtaining the result of professional service and of art service by competition is, permit me to state, an obsolete and impracticable method.

"If you were to defend an action at law you would not invite competitive proposals from lawyers to see which defense you would adopt. If you were ill you would not call a competition of doctors to see which one suited you best. You would pick out the lawyer or the doctor you preferred and employ him; and this is the only way—

not merely the best way—to secure good results among architects. The greatest objection to the competitive method in securing such a design as is wanted is that that method in its very nature excludes from your possible employment all the fittest and most capable men. Firms whose work will be the finest from the art point of view, and whose supervision will be sure to exclude the possibility of scandals, will not enter an open competition at all." Whether or not Mr. Kennedy's remonstrance and arguments, sound though they be, will overcome the usual predisposition in favor of a competition, his reasons are such as will be appreciated by the architectural profession and should appeal to the intelligence of the public.

Is Architecture Construction Ornamented?

Notwithstanding that Fergusson's definition of architecture as ornamented construction very largely prevails, and is accepted by perhaps the majority of the profession, the sentiment seems to be growing among students and practitioners that this description is unfortunate and inaccurate. Taking a broad view of the subject, these dissenters maintain that what may be termed good building constitutes architecture, and that the difference between the architectural styles is mainly a question of construction rather than of decoration. In this view construction may be termed the substance and decoration the shadow. The planning and logical development of a structure afford ample opportunity for architectural skill of a high order, and where the problem has this attention we are inclined to believe that the resulting building may be properly classed as architecture, even though devoid of ornamentation. The argument that the difference between the architectural styles is more a matter of planning than of decorative details seems to be supported by the development of the two great periods, popularly termed the Classic and the Gothic, technically the styles of the lintel and the arch. The Greek developed his architecture from an honest use of all members; wall, lintel and column were truthfully structural in his hands. Nothing was used for covering or concealment. So, too, with the true Gothic architect. It is true that both the Greek and Gothic architects gave their structures much added charm and beauty by their use of ornamentation, but would not their buildings have been architecture without this embellishment?

The Value of Good Architecture.

It is somewhat singular that among the intelligent class of men that predominates in our legislative bodies, city, state and national, there is not a better appreciation of the educational and even monetary value of a high character of public architecture. Occasionally, owing to a fortunate combination of circumstances, a Richardson is given a public commission, as in the court house at Pittsburg, but as in that case his masterpiece is likely to be jeopardized at some subsequent time when other less favorable influences prevail. It too often occurs that important public work is in the hands of a committee with no just appreciation of good architecture, who are so desirous of making a record for economy that the cost is pared down to the extreme limit and a building is erected, poorly planned, cheaply built, and devoid of good design. The average school house seems particularly unfortunate in this regard. Even in as enlightened a city as Baltimore, with her peculiar experience, the man most influential in school construction exerted his utmost efforts recently to secure the erection of school houses of a class not at all in keeping with the commercial and other buildings under way there. It would seem natural to expect that a man identified with education would appreciate the unusual educational value to the community of a school house well planned and attractive in design and decoration, but the cases are numerous where the contrary is true. It would not be difficult to establish the claim that a beautiful building like the St. Paul capitol, or a group of public buildings of like character brings good financial returns to the city in which such structures are located through the visitors attracted by them, as is undoubtedly the case in many cities in Europe.

Concrete in Building Construction.

When there has been a great and rapid growth in any field of endeavor there is forced the question: "Has the limit been reached in this direction?" Such an inquiry arises in connection with the enormous increase in the past few years in the use of concrete in building work. Its value, especially in connection with reinforcement for floors, partitions and walls, has been so well established by extended tests in Europe, as well as here, that provision for its use in some form of construction has come to be a part of the everyday practice of most architects. The concrete hollow block industry, started but a few years ago, has had a phenomenal growth. The use of these blocks by the architects has not been to an extent corresponding to the general demand for them. The improvement in their manufacture, however, is going steadily forward and their growing use by architects seems certain. As to stone manufactured from concrete, its use dates back at least to the Egyptians, who produced a material so closely resembling natural stone that for ages it was thought to be a natural product; that it was made from a finely pulverized material and Egyptian cement of high grade has been fully proved. It is probable also that a portion at least of the pyramids were of concrete stone, as indicated by pieces of wood found in the mass. Properly made, following the process of nature as closely as may be, concrete stone is a product with a good surface and the sparkling appearance of a natural stone of high grade. It will never take the place of a piece of polished marble or granite, but for permanency and fire resisting qualities the manufactured stone commends itself for many uses in building. Another important use of concrete that is steadily gaining in favor is for piles for foundation. These are destined to supplant wooden piles, the life of which is uncertain owing to decay, the attacks of the Toredo worm, and possible damage from fire. In expense, while the cost of concrete piles is perhaps twice as much as that of wood, there is a large saving in their use, as fewer concrete piles are usually required and much labor saved in placing them. In one instance brought to our attention the plans called for 3,200 wooden piles, cut off below water level with a capping of concrete. In substitution for the wooden piles, 850 concrete piles were placed. The estimate for wooden piles was $9.50 each, a total of $52,840. For the concrete the cost was $20 each, an aggregate of $25,403. From this mention of a few of the more important uses made of concrete the prominence of its place in building construction is indicated.

THE OLD CALIFORNIA MISSIONS AND THEIR INFLUENCE ON MODERN DESIGN

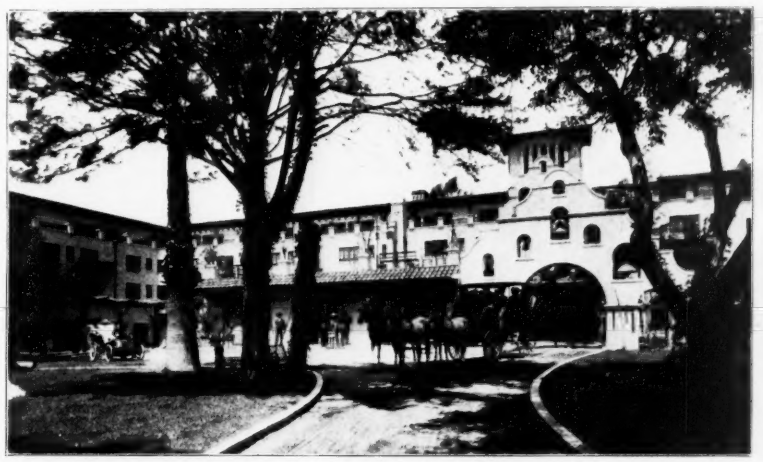
BY W. L. B. JENNEY, ARCHITECT.

OF these old missions, and there are about twenty scattered along the coast from San Francisco to San Diego, the most artistic architecturally is that of San Juan Capistrano, founded in 1776, and reduced to a ruinous condition by the earthquake of 1812. Miss Powers in her admirable little book on the Missions of Cali-

MISSION OF SANTA BARBARA.

MISSION OF SANTA BARBARA.

Luis Rey, founded in 1798. It is still in large part in good preservation. This mission is in progress of restoration in what the English call a "pious restoration"; that is, as near as possible to its original condition in every detail. One of the well preserved, or, rather, restored missions is Santa Barbara, located on a small bay near a large village, which was governed by a chief very friendly to the missionaries. The Indians assisted to erect the building. The church suffered much in the great earthquake, so that it was rebuilt, 1815-1820, with strong walls of huge stone with good buttresses, and a six-bell, two-story tower. There is a fine garden in the cloister or patio and a fine large fountain in front of the church.



MISSION HOTEL, RIVERSIDE, CAL.

The entire mission is well cared for and much visited by tourists. The proudest edifice of this time was San

fornia, styles it the Melrose Abbey of the West, as she fancied the impression therein by moonlight closely resembled each other. Unless there is something lacking in your soul, a trifle nonsensical I think.

As the old missions of Mexico gave birth to the then new missions of California, naturally we must look to Mexico for the origin of the type, evidently derived from the Spanish Colonial Renaissance, but we must bear in mind the great difference in the environment, the lack of skilled labor in California, and that the architects were in most part the Franciscan Fathers, who were not professionals. The material at hand in California was often the "adobe," which, owing to the neces-

STATION AND HOTEL FOR SANTA FE RAILWAY, AT ALBUQUERQUE, N. M.

sity of quick work, frequently served a good purpose for the temporary building.

(To be continued.)

ARCHITECT, SCULPTOR AND PAINTER*

BY EDWIN H. BLASHFIELD

I AM to have the honor of speaking this evening for the mural painters and it seems to me that the solidarity of the triumvirate of architect, sculptor and painter is just now to us the most important subject in the world. Divided they do not fall, the three arts, that is true; alone each would make a good showing, but united they stand for the greatest collectivity of beauty which man has produced. Follow the whole course of history and you will find no buildings of importance, save the Pyramids of Egypt, which have not been greatly enhanced in beauty, celebrity and influence for good by the fact that sculptor and painter have followed in the train of the architect.

The architect comes first; he is the leader. Even in prehistoric times he fortified the cave mouth and wattled the hut before his younger brothers carved profiles of bear or deer on bone or daubed them in red clay on the rocks. And later with that development which in the dictionary definition marks the difference between building and architecture the architect must determine the proportion of wall, window and door before sculptor or painter can be useful. Then the architect is leader, but close behind him come his aids. The temple of the arts is builded by three minds acting in unison, and the keystone to the structure is Harmony, harmony of thought and feeling between architect, painter and sculptor.

It is upon this above all else that we, the representatives of the allied arts, must insist if we would be successful. Harmony should be our slogan. The very word decoration tells us so, tells us that once in its place our work must be decorous, suitable, fitting. If it is not enhancing to them and enhanced by them, no matter how fine it is as an individual work, it is a failure from the true point of view because it comes to jar, not to consolidate the effect. Therefore, and because if we ignore each other we may harm each other, we must study each other, make allowance for each other, enough allowance and what is perhaps nearly as important, not too much.

If ever a situation required one to light the lamp of sacrifice it is that of architect, sculptor and painter confronted mutually by the same problem, but on the other hand, if the sacrifice of personality is entire, the lamp is quite snuffed out and there is no more light at all.

The painter or sculptor who proceeds in contempt of his architect is a bull in a china shop to be led outside as soon as possible and turned loose in the pastures suited to untamable personalities. But the architect will be as bad if he turns Procrustes and lops off the feet or heads of his collaborators till their stature just fits the size of his idea. Mutual concession will lead to mutual comprehension and pave the way to mutual education. We shall never be really in harmony till each learns something of the other's specialty and realizes that quite apart from temperament and genius in the producer there are reasons for beauty, reasons which can be studied and understood. Today we feel our lack of knowledge of each other and are a bit irritated by it. Says the painter, the architect has no decorative sense; says some one else, the sculptor has no sense of scale. As for the architect's estimate (too true perhaps) of the painter's knowledge of architecture, it reminds one of the dialogue in the novel of the Heavenly Twins between the tourist and the bad boy of the story.

"Flying buttresses," says the tourist, looking down into his guide book and up at the cathedral, "what are flying buttresses?" "Flying buttresses," said the boy, smoothly, "flying buttresses are a sign of rain." We mural painters really do know a little more than the tourist, but there's lots of room in us for more knowledge. More all-round education for painter, sculptor and architect is what we want, for it is only by our harmony and mutual comprehension that all sound education of the public, which is so crucial to our success, can be attained. We are willing to begin with educating ourselves, we mural painters. We are young in art; our work, save the splendid example in the Ascension church in New York (still the most beautiful mural painting in America, not excepting the Puvis de Chavannes), was born but a dozen years ago at the World's Fair. We are coming of age now; a rather callow age as yet, you say, but if we recognize our callowness we shall mature. Our art is a difficult one, each problem is a new problem, our men and women have grown from the little people of the easel pictures to more than life size and they are harder to manage. The cleverly brushed square inches of the sketch has expanded to square yards; the portrait of the easel painter must be taught to carry sixty feet at least; on our big canvases we must combat unexpected reflections and inequalities of lighting. We ask the architects to credit us with all these difficulties, and on the other hand we must admit their right to ask sacrifices of us. A painter has no business to sit in his studio and, formulating his scheme, be it ever so good, ask the architect to fit that scheme to his architecture. Such a painter would be exactly like the artist who, being commissioned to paint a tavern sign with a white horse on it, said he would rather paint a red lion. "But I want a white horse." "Oh, but the red lion would be handsomer." "Yes, but I want a white horse and won't have anything else." "Oh, well, if you are so obstinate, I'll paint you a white horse, but it will look like a red lion."

There are architects who reasonably fear in some cases that the white horse ordered may look like a red lion, and to do away with such fears the mural painter should earnestly study beforehand the place which he is to decorate.

Before ending, I want to say a word about the subject of decorations. We have a wonderful field before us—new cities awaiting our hand. Do not let us forget that it is an American field, that it is an American field suited to the celebration of what Americans have been in the past, what they are now and what they hope for in the future.

We do not wish to have processions of pale abstractions only upon our walls, Goddesses of Liberty and Justice and such; we want processions also of workmen with their tools, real men and women of all sorts and conditions. It is good to see the historical subjects coming, good to see the facts. But in proceeding thus as patriotic Americans, let us also proceed heedfully, looking carefully at all sides of our question.

Let us remember that to the American the apprehen-

* Paper read at the annual dinner of the New York Architectural League, February 2, 1906.

sion of fact is perhaps easier than the cultivation of fancy; let us, therefore, not neglect the latter. I would deprecate with all possible earnestness the opinion of those who would wish us to substitute realistic for what they call idealistic or allegorical subjects. We don't want to substitute one for the other; we want to have both, and we want them very much.

Fine spun allegory is a nuisance, the refuge of the uninventive, but simple symbolism is good and essential because without it we can not have large treatment of the nude and simple draperies, and without such treatment no rounded national art is possible.

Throughout the history of painting during thousands of years, save in Holland, wherever and whenever the nude has been neglected just so surely the art of that school has either ceased to be all 'round in character or has ceased to be robust. The different branches of painting are equally great, whether portrait, landscape, historic or symbolic, but a national school does not consist of any three or four branches, but of all of them taken together. Symbolical painting of the nude and large draperies is essential to us. Say if you will that we have not yet the capacity to treat it with the strength and splendor due to it, but admit also that we shall not learn to swim by avoiding the water. We paint with oil upon canvas just as the Venetians did; their works have lasted 400 years. We must learn to paint pictures whose potentiality for material endurance need not terrify. Such learning must be based upon study of the nude in the size of life.

Therefore, we need and should have what is commonly called idealistic painting and sculpture. My whole subject tonight has been the mutual education of architect, sculptor and painter.

This will compel expenditure of thought, time and money, but the result should be worth the effort.

Our opportunity is almost boundless. We have an empire for our client, and for our themes the conquest of a continent by the arts of peace, the events of four wars, exploration, invention and evolution. There is plenty of capacity in the American, and with perfected mutual education we shall be equal to the celebration of all this. We shall become so gradually, for we recognize our difficulties.

It is for such recognition and improvement that we are teaching in the schools, founding university departments at home and American academies abroad. We are trying to help the coming generation to a better equipment than was ever provided to us.

Help toward such a happening is in a way better and bigger than any picture which we can paint, statue which we can model, building which we can raise, and if the man grown too old for work sees such a future coming, he may put down compass or chisel or palette without bitterness and say with a good heart, *finis coronat opus.*

MUNICIPAL IMPROVEMENTS

BY ALBERT KELSEY, ARCHITECT
CHAIRMAN OF COMMITTEE OF EXPERTS OF THE ART FEDERATION OF PHILADELPHIA

PART VII—TERMINALS, CONTINUED

IT should be remembered that while the biggest treatment and the simplest treatment of a building and its setting is usually the best, completeness and grandeur can not be fully attained without an exquisite touch of detail.

The seething aggregations of weary humanity that pass through these portals daily justify an expenditure of money for ornamental treatment. This fact has long been recognized abroad and recently in Broad Street Station, by a great sculptural allegory representing the development of transportation which occupies a conspicuous position at the head of the main stairway. In several of the Paris stations paintings representing the scenery and some of the quaint customs of the country traversed by the lines having a particular depot are cleverly depicted to stimulate a desire for travel, and in these and many other ways there is opportunity for much improvement since large and wonderfully distorted railroad maps are by themselves no longer of sufficient interest to please the traveling public.

An alliance between a city and a railroad which has worked out happily for both, avoiding even the appearance of harboring death traps of any kind, is seen at Dresden, where both an elevated and a surface railway enter the city, one to reach the beautiful new terminal and the other to pass through it and then out across the city to other terminals of nearly equal interest, in equally well disciplined cities. Here the circulation of trains is particularly well provided for.

At Cologne the station is an elevated one, and aside from its spacious setting there are several of its details worthy of mention. Among them the end of the train shed has a wide border of colored glass which should be mentioned, also a generous overhang to the cornice of the great end arch from a distance is quite effective; and throughout the lower portion of the building brightly colored faience and enameled brick add cheerfulness and warmth to a type of building which is too often expected to be more or less dingy and uninviting in appearance.

Scores of smaller cities have stations on inviting plazas, whose architecture is of more than individual interest. In considering them collectively the one point to be driven home is the fact that they all have a certain homogeneousness of expression, and seem to be as much a part of the arterial system of the city as to the less public iron roads to which they really belong.

Attention is invited to the terminal at Genoa, with its great central portal, from which wings extend around two sides of a plaza, at either end of which there is a great archway, one used for a cab entrance to the station and the other a triumphal arch across a public street, erected merely for the sake of symmetry and out of civic pride. Here the stranger descends from his train and is welcomed

by a colossal statue of Columbus, the Genoese authorities having carefully calculated to produce a favorable first impression upon strangers.

The Milan terminal square is fine also. It is dignified, fresh, frank and teeming with luxuriant vegetation. It commands the city and in consequence is a worthy front doorway to it. Other cities have equally modern stations, with equally spacious squares, giving upon equally well distributed thoroughfares, but the writer knows of none where practical and æsthetic considerations have been worked out to produce such a good first impression. There, from a wide terrace, large enough to receive a regiment of soldiers without at all interfering with normal street traffic, a park gently slopes down to the level of the town

But we do not have to go abroad for a really fine example of symmetrical development. The last illustration is the railroad entrance to the city of Washington, now well under way and promising to be the most monumental station in the world. Here, through the co-operation of the park board, for the improvement of the city, a vast semicircular plaza will adjoin the structure, and from it radiate many streets, thus making of it an organic part of the city plan and a thoroughly rational distributing center. This example stands above all others as a mile-stone in our rapid progress.

A city may well feel itself elevated by the wide fame of one of its buildings. American cities are getting many buildings to be proud of, and among them some are railway terminals. Washington, New York, Providence, R. I., and several other cities have demanded monumental entrances and the demand has been and is being granted with princely liberality. At Providence an open space gives the station a proper setting, but unfortunately New York has not yet made provision to meet these vast undertakings fairly and squarely on a mutual basis.

The cry some narrow economists make about immense expenditures for public improvements strengthens the position of a selfish railroad board, and, since we have seen that the contest at best is an uneven one, our citizens can not afford to place themselves at the mercy of a private corporation to ultimately have insult added to injury by being shamed into meeting them half way. So long as the railways pursue a liberal policy and the cities a policy of indifference and false economy, so long will discord continue. The writer is far from encouraging raids on a city's treasury by railroad officials, but he does urge intelligent co-operation, which first of all means co-operative foresight. The cities have the whip-hand in the contest in that they possess property and rights of way which the railroads in expanding must have. To meet this growth certain streets and squares must sooner or later be enlarged, and since it is often possible to compel the railway companies to do this enlarging in return for valuable concessions, why not make them do it? In short, the two should influence one another reciprocally. Happily, during the last few years, a change of very great importance has taken place in the relation of railroads toward the public. They are showing more and more consideration for the rights of the taxpayers, and it is certainly to be hoped that in turn the taxpayer will awaken to a realization of his obligation to the future of his city.

The terminal improvements at Forty-second street, New York, are estimated to cost $17,000,000. They provide for two levels of tracks below the street grade. The upper for express and the lower for suburban traffic. The station yard will start at Fifty-seventh street in a tunnel the full width of Park avenue; at Fifty-first street the yard will carry ten parallel tracks, and from there the tracks enter the main yard which will extend to Forty-third street, from Lexington almost to Madison avenue. The station will complete the terminal to Forty-second street, covering about eight acres. Its most conspicuous feature will be a ticket lobby 90 feet by 300 feet, and a concourse 470 feet long by 160 feet wide, and 100 feet high from the floor to the center of the steel and glass arch. The Pennsylvania railroad, always up to date, is tunnelling under both rivers and will soon discharge its passengers in even a more splendid station. These examples, at once increasing and concealing the railway traffic, will provide ample terminal facilities for themselves, but it is a shocking fact, that even in a city where all buildings seem to go skyward to economize space, and where it is a common saying that there is standing room only," it is a shocking fact that as yet the city has made no provision for adequately widening out its arterial system in the neighborhood of these great throbbing hives of human circulation.

FREIGHT TERMINALS.

Before leaving the subject of present investigation, there is yet another phase to be considered and one of nearly equal importance, though it may be treated with brevity since many of its requirements are similar to those already discussed.

Freight terminals are regarded as purely utilitarian problems, and in consequence in their arrangement in this country they are lacking in that dignified precision of plan which characterizes the French entrepot. While the freight terminal can never rank as a splendid monumental center, yet its importance in a community may be emphasized architecturally, as it is abroad, where it is often made attractive by the mere planting of a few formal rows of trees and by the careful grouping of simple freight sheds. It is not uncommon there to so dispose the tracks, sheds, freight houses and driveways in such a manner as to at once produce a really interesting composition and an increasingly efficient scheme; detached and separate from the more public part of the city plan and yet blending with it in such a manner as to provide direct and easy access for drays and heavy trucks. Unlike the passenger terminal, it must adjoin the water front if there is any navigation, in order to provide facilities for the quick and easy transfer of cargoes; and unlike the passenger terminal, it is usual to control these areas, making them appear only semi-public, while the passenger terminal should be primarily designed to be—and to appear to be—accessible and free to all. It should be made conspicuous in order to focus the comings and goings of the multitude upon it; there should be something majestically broad and inviting about it to irresistibly draw the movement of thronging crowds. In short it should be a focal point of unusual architectural interest.

Freight terminals might be classed under the head of water fronts in communities where there is any water traffic at all, as it is as much a terminal for one kind of shipping as for the other as shown in the description of the harbor and freight yards of the city of Algiers.

(To be continued.)

THE PLANNING OF HOSPITALS

BY T. M. CLARK, ARCHITECT

PART VI

WITH ordinary paint, an "oil finish" should be required, on plastered walls as well as woodwork. This, having a slight gloss, shows, by reflection, any irregularities of surface in the plastering, and contractors usually prefer "flatting" the last coat, by substituting turpentine for the whole or a part of the oil; but a flatted coat collects dust, and is hardly washable, while an oil finish is readily cleaned. A still smoother "egg shell gloss" is obtained by mixing some good varnish with the last coat, and various enamel paints are sold, under the names of Ripolin, Porcelite, and so on, which give a still harder and more glossy surface, at somewhat greater expense.

A plastered wall painted in this way is almost entirely impervious to air, while the porosity of the plaster behind the paint keeps the wall warm and dry. Attempts have been made to secure absolutely impervious walls for hospitals by lining them with glass, but, as the glass is a comparatively good conductor of heat, an unpleasant moisture sometimes condenses on the inner surface, and the advantage gained is, at best, out of proportion to the expense.

The ceiling of the ward, if plastered, should be painted like the walls, making it impervious and washable. The junction of walls and ceiling should be coved to a radius of two inches or more; and there should be no cornice or molding of any kind on any part of the wall. Stamped metal ceilings are used in some hospitals, and admit of unlimited painting and washing, but the surface is not so smooth as that of a plastered ceiling, and the numerous joints afford a certain harbor for dust.

The floor of the ward, and of the auxiliary rooms, is always connected with the walls by what is known as a "hospital base," consisting of a molding with a hollow, in the form of a quarter circle, of about two inches radius. Where made of wood, this usually has a tongue on one edge and a groove on the other. The base is set in place before the plastering is finished, and the plaster brought down on top, and the flooring is laid against the other edge, so that the hollow curve is tangent to the surface, both of the floor and the wall, the tongue and groove on the edges serving to hold both the plastering and the floor in the proper relation to the molding. In the bath rooms, lavatories and duty rooms, and in some hospitals throughout all parts of the ward buildings, the base is made of glazed earthenware of the proper shape, the floor being of marble or encaustic tiling, or of "terrazzo," of marble chips and cement, or of some one of the various patented mixtures of cement and asbestos or other fibre, which have the advantage of being without joints, and of being warmer to the feet than tiling or marble. The most common, the cheapest, and perhaps the most comfortable flooring, is, however, of wood; but wood has the serious defect of being shrinkable, so that seams open between the boards in winter, which are likely to collect germs and dust. In order to diminish as much as possible the effect of shrinkage, the floor boards should be very narrow—not over two inches wide on the face; and where an under floor is used this must also be of strips of about the same width.

The flooring boards should be tongued and grooved to keep them in the same plane, and must be not only well seasoned, but thoroughly kiln-dried before laying. If properly laid they will then form almost a solid surface in ordinary weather, and will show hardly perceptible seams in the dry weather of winter. Oak is sometimes employed for such floors, and is hard, smooth and durable; but rift Georgia pine is the material most used, and has the advantage of shrinking only about half as much as oak. Whatever may be the wood chosen, the floor, after laying, should be smoothed with plane and sandpaper, and then finished with wax or paraffine. The best treatment is to brush it thickly with melted paraffine, which, on cooling, forms a coating over the surface. This coating is then rubbed down into the pores of the wood with hot irons, until no more is absorbed. Georgia pine flooring thus saturated with paraffine is less disposed to shrink than untreated wood, and presents a hard, impervious surface which is easily kept clean. Where such thorough saturation is impracticable, the floor should be oiled with linseed oil and turpentine, with a little dryer, and, after the oil is thoroughly dry and hard, waxed with any of the numerous compositions of beeswax and paraffine sold for the purpose, and rubbed with a weighted brush or dry cloth. Occasional repetitions of the rubbing or brushing, with the daily use of a dry mop, will keep the floor polished and clean. Spots can be removed from such a floor, if necessary, by rubbing with fine sandpaper and turpentine, and subsequent repolishing, but floors treated with wax or paraffine should never be washed with water, which raises the grain and makes the floor rough, at the same time that it finds its way into the seams and stains or rots the boards.

In Italy, marble or mosaic floors are waxed and polished in the same way as wood floors, and similar treatment might, perhaps, be applied with advantage to mosaic or terrazzo floors in hospitals. Not only is the floor thus made pleasanter to walk on, but, the pores being closed by the wax, it can be cleaned by brushing with the dry mop, in place of the usual laborious washing.

In practice, terrazzo or tile floors in hospital wards generally have strips of matting laid through the passageways between the beds, both for greater comfort in walking and to deaden the sound of footsteps. This is, perhaps, unavoidable, but it is objectionable, as dust collects upon and under the matting, and is scattered over the room when this is rolled up for washing the floor beneath it; and the smell of most mattings detracts from the perfect purity and freshness which should characterize hospital air.

To insure still further the absolute freshness of the atmosphere in the wards, it is usual to build them without cellars, or, at least, to provide the cellars under them with plenty of windows, left always open, and to avoid storing anything there.

(To be continued.)

SANITARY ENGINEERING IN THE MODERN OFFICE BUILDING

BY J. PICKERING PUTNAM, ARCHITECT

PART VIII

FOR the purpose of studying this matter thoroughly I constructed a number of very shallow and very wide drum traps of glass and sheet metal in such a manner that all the movements within them of air and water could be easily seen.

Fig. 25 shows in perspective one of the traps so constructed. The body is thirteen inches square and an inch and a half deep. The inlet and outlet arms are made of inch and a half pipe. The inlet end descends below the

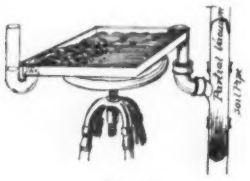


Fig. 25.

Fig. 26

bottom of the drum instead of entering the side, as is customary.

Under siphoning action the seal standing in the inlet bend rises into the drum and simply stands one side while air passes through the trap from the fixture above the water in the drum, as shown by the arrows in the drawing, and breaks the partial vacuum in the soil pipe. The storm having blown over, the water seal quietly returns from the drum or reservoir chamber into the bend and restores the original conditions as a reed rises after the fury of a hurricane has passed.

Thus the trap *becomes its own back vent pipe*, a back vent pipe which has no inaccessible body waiting for mischief, which provides entire security, and yet which adds absolutely nothing to the expense.

Fig. 26 shows this trap in section. As will be seen, a small portion of the water in the trap will be thrown out at the first application of the siphoning strain, but as soon as the level of the water in the reservoir chamber has been lowered a little below the overflow point, far enough to provide for the wave action produced by the air blast, no further loss of water can be occasioned even by the severest strain that can be brought to bear upon it.

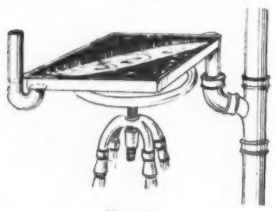


Fig. 27.

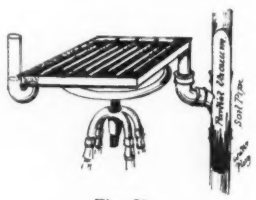


Fig. 28.

This trap was found capable of withstanding a strain severe enough to empty an S trap fully vented under the most favorable conditions with a new clean vent the size of the bore of the trap with two vents and only fifteen feet long.

The trap is, however, still open to the objection that it is not self-scouring. The sediment chamber is not so large as it would be in a deeper drum trap. The cesspool feature has been eliminated only in one of its dimensions. It is still a cesspool in the other two, so that it could be clogged, as shown in Fig. 27, and lose much of its power of resistance.

How, now, shall we render this trap self-scouring without reducing its resisting power? We have accomplished it by constructing it as shown in Fig. 28. A sufficient number of partitions have been set in the reservoir chamber to create a continuous zig-zag waterway having a sectional area substantially equal to that of the inlet and outlet arms of the trap. The water is now obliged to sweep around all these passages and scour every part of the trap, its cleansing effect being proportional to the speed of the current, just as it is in any straight pipe of the size of the fixture waste and of the arms of the trap.

This breaking up of the area of the reservoir chamber into a continuous passage does not diminish in the least the resisting power of the trap to siphonage nor reduce its water capacity for withstanding evaporation. The air blast produced by siphonage throws the water for a moment out of the dip forming the seal proper and sets up a wave in the water lying in the lower half of the reservoir chamber. But the wave is arrested and broken up at each sharp bend formed by the partitions, and if these partitions are long enough and numerous enough, this wave action is neutralized by counter action before it reaches the over-

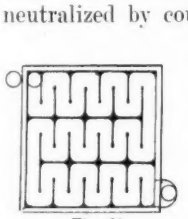


Fig. 29

Fig. 30.

Fig. 31.

flow point, while the air passes round the bends with tremendous speed in the space above the water line and escapes at the outlet into the soil pipe without driving the more sluggish water out before it. The water is sprayed against the top and sides of the passageway in the trap and, in virtue of the greater attractive and cohesive force of the particles of water over those of air, the former is retained by and reflected from these surfaces, while the lighter air escapes. As happens in a rain storm beating against a window pane, the rain is caught against the glass and by every adjoining corner and projection, and returns to the ground, while the air escapes.

With traps made in this manner, the power of resistance to siphonage is in proportion to the horizontal length of and number of bends in the waterway in the trap. The largest is capable of resisting the most powerful siphonage that can possibly be brought against it on any apparatus which can be built for making a plumbing test with which I am acquainted, and much more powerful than any that can be brought to bear upon it in plumbing practice.

This statement holds good down to a trap of six or eight inches in diameter, the only difference being that in the smaller sizes the perpendicular dimension must be slightly increased. Thus by increasing the depth of a seven-inch trap by half an inch its resistance can be made

equal to that of a ten-inch trap, and by increasing the depth of a six-inch trap by an inch the same result can be attained in this case.

Figs. 29 and 30 show two other arrangements of the partitions.

Fig. 31 shows four ordinary S traps connected together. I have drawn them for the purpose of comparison with Fig. 30. Such an arrangement of S traps would, of course, result in "air-binding." But by venting them at the crown this is obviated.

Now, the only difference between these two arrangements is that in Fig. 31 the S traps are placed vertically and in Fig. 30 they are placed horizontally. The forms and sizes of the traps in both cases are absolutely the same. But the entire character of the S trap has, by this simple change of position, become marvelously and radically altered. In its ordinary vertical position the trap is now known to be utterly unreliable and therefore in effect worthless, presenting as it does the feeblest possible resistance to all the adverse influences which tend to destroy a water seal in plumbing, and in this position the S trap should never be used except for water closet seals, and then only under conditions of arrangement which will be pointed out further on.

In its horizontal position, on the contrary, it becomes absolutely invulnerable, and acquires all the qualities to be desired.

Thus the desideratum of rendering an S trap antisiphoning without back venting has been attained, the trap being vented through its own inlet pipe, which both protects the fixture and ventilates the waste pipe system with pure air from the room rather than with foul air from an elongated cesspool.

Nevertheless we find that the free and rapid discharge of the waste water in normal use is diminished in proportion as the turns required in its passage through the trap are abrupt and varied.

(To be continued.)

COMMENTS ON ARCHITECTURAL STYLE.

BY JOHN M. CARRERE AND STANFORD WHITE.

MR. STANFORD WHITE, of McKim, Mead & White, says of Dr. Parkhurst's new church:

"The style of architecture of the Madison Square Presbyterian church is that of the early Christian, with a modified Byzantine treatment in the interior. It is to a certain extent a protest against the prevalent idea among laymen that a building to be church-like must be built in mediæval style.

"The style of architecture known as Gothic has nothing to do with the simple forms of early Christian religion, or with that of the Reformation, or with the style of architecture which prevailed in our own country when it had its birth as a nation.

"All these, which belong to the Protestant religion and to us, have no affiliations whatsoever with Gothic, but with the classic style. The Gothic or mediæval form of architecture belongs absolutely to the Roman Catholic church, and was developed under monastic influences and traditions which obtained from the ninth to the fifteenth century.

"Nor is the plan of the churches and cathedrals built in mediæval style that of a modern church, but is properly fitted only to the forms and rituals of the Catholic church. In the design of the Madison Square Presbyterian church the chief aim is to treat it as a modern church and in a style natural to and belonging to the religion which it represents and the country in which it is built."

As to the architectural style of the New York Public Library, Mr. John M. Carrere, of the firm of Carrere & Hastings, has this to say: "In building such a structure for this intensely modern city, the style most appropriate is that which represents the best in New York today. It will surely not be the style that is typical of a bygone race, no matter how beautiful that style may be.

"The ideal building should not be merely an expression of the individual preference or taste of its architect. It must first take into account the highest development of architecture as exemplified in its last great historical period, and must add to this whatever artistic tendency is capable of architectural expression from the age to which the building belongs.

"By this method the architect of today is compelled to go to the eighteenth century, to the palace of Louis XVI, for the architectural type that is historically suitable for our age. During the nineteenth century architecture remained stationary, and its onward development must be based, therefore, on the best of the Louis XVI epoch—on such buildings as the Louvre or the Place de la Concorde—that in its turn was the resultant of all the epochs coming before it.

"It is only by this adherence to the historical sequence to be found in all true architecture that appropriateness can be assured and originality and progress toward higher types made possible. So long as it is considered imperative always to build a church in the Gothic style, or a public building in Greek or Roman, so long architecture will be foreign, eloquent only of a dead age and mode of thought, unrepresentative of the ideas and tendencies of modern times, that thus remain in the chaotic condition, architecturally, to which a century of silence has brought us.

"In determining the architectural type of the New York library it is this logic of history, as one may call it, that has been mainly considered. Hence the building will not be an exponent of any one style to the exclusion of the others, but may be characterized as belonging to the modern Renaissance, more or less of the Louis XVI period, with such modifications as the conditions and needs of our own age have suggested—and in this way it is hoped that it will be representative, so far as that is possible, of modern New York."

Concrete building blocks have developed almost as rapidly in shape and form in the past few years as in composition and general manufacture. When only a few sizes and shapes were made, the architect had a rather limited variety of materials to work with. There were usually the large and small blocks, representing bricks and stones, with the faces all finished exactly alike, and when a wall was constructed of such materials the effect was somewhat artificial and monotonous. Owing to the limited capacities of the machines, the blocks were in greater demand than the supply, and even today with the great numbers of machines on the market the demand has kept pace with the production.

COMMITTEES, AMERICAN INSTITUTE OF ARCHITECTS.

TO CONFORM to the instructions of the last convention of the American Institute of Architects, there have been appointed for 1906 the following committees, numbering twenty-three, to look after the affairs of the institute:

Executive Committee—Frank Miles Day, chairman, Philadelphia; Glenn Brown, secretary, Washington, D. C.; Cass Gilbert, New York; Robert Andrews, Boston, and George B. Post, New York.

Judiciary Committee—Alfred Stone, chairman, Providence, R. I.; John M. Donaldson, Detroit, Mich., and William A. Boring, New York.

Board of Examiners—William B. Mundie, chairman, Chicago; Irving K. Pond, Chicago, and Edgar V. Seeler, Philadelphia.

House Committee—Glenn Brown, chairman, Washington, D. C.; Robert Stead, Washington, D. C.; Frederick B. Pyle, Washington, D. C., and Leon E. Dessez, Washington, D. C.

Committee on Education—Ralph Adams Cram, chairman, Boston; S. B. P. Trowbridge, New York; John M. Carrere, New York; William M. Kendall, New York, and R. Clipston Sturgis, Boston.

Committee on Foreign Correspondence—Glenn Brown, chairman, Washington, D. C.; Charles I. Berg, New York; Gustav W. Drach, Cincinnati; Frederick A. Russel, Pittsburg, and John Russell Pope, New York.

Committee on Contracts and Lien Laws—Alfred Stone, chairman, Providence; Arthur G. Everett, Boston; Peter B. Wight, Chicago; Hugh Roberts, Jersey City, N. J., and Walter Smedley, Philadelphia.

Committee on Applied Arts and Sciences—Irving K. Pond, chairman, Chicago; Claude Bragdon, Rochester; Elmer Grey, Los Angeles; Bertram Grosvenor Goodhue, New York, and A. W. Longfellow, Boston.

Octagon Fund Committee—Cass Gilbert, chairman, New York; George B. Post, New York; William B. Mundie, Chicago; Robert Andrews, Boston, and William S. Eames, St. Louis.

Committee on Competitions—Robert D. Andrews, chairman, Boston; William B. Mundie, Chicago; Richard H. Hunt, New York; Henry Rutgers Marshall, New York, and William S. Eames, St. Louis.

Committee on Practice—Walter Cook, chairman, New York; J. B. Noel Wyatt, Baltimore, Md.; W. B. Stratton, Detroit; Richard H. Hunt, New York, and James P. Jamieson, Philadelphia.

Committee to Nominate Fellows—W. A. Boring, New York; C. Howard Walker, Boston; Wilson Eyre, Philadelphia; John L. Mauran, St. Louis, and John G. Howard, San Francisco.

Committee on the Nomination of Honorary and Corresponding Members—Charles F. McKim, chairman, New York; H. Langford Warren, vice-chairman, Boston; A. B. Pond, Chicago; Thomas Hastings, New York, and Robert S. Peabody, Boston.

Committee on the Nomination of Officers—John M. Donaldson, chairman, Detroit; Benjamin S. Hubbell, Cleveland; Alfred F. Rosenheim, Los Angeles; J. Randolph Coolidge Jr., Boston, and Arnold W. Brunner, New York.

Committee on Government Architecture—George B. Post, chairman, New York; William B. Mundie, Chicago; Joseph C. Hornblower, Washington, D. C.; Alfred Stone, Providence; J. Randolph Coolidge Jr., Boston; Robert S. Peabody, Boston; Walter Cook, New York; Edgar V. Seeler, Philadelphia, and E. B. Green, Buffalo.

Committee on a National Bureau of the Fine Arts—The Executive Board is instructed to act as such a committee.

Committee on Specifications—William A. Boring, New York; Grosvenor Atterbury, New York; Frank C. Baldwin, Detroit; Frank W. Ferguson, Boston, and A. B. Pond, Chicago.

Committee on Municipal Improvement—Arnold W. Brunner, New York; Albert Kelsey, Philadelphia; Glenn Brown, Washington, D. C., and J. Monroe Hewlett, Brooklyn.

Committee on the Seventh International Congress—W. L. B. Jenney, chairman, Chicago; William S. Eames, vice-chairman, St. Louis; Francis B. Allen, Boston; Glenn Brown, Washington, D. C., and George O. Totten Jr., secretary, Washington, D. C.

Committee on the Preservation of Buildings of Historic or Artistic Interest—The Executive Board is instructed to act as such a committee.

Committee on Signing Buildings and Using Institute Initials—Merritt J. Reid, chairman, San Francisco; Abram Garfield, vice-chairman, Cleveland; Douglas H. Thomas Jr., Baltimore; Frank H. Quinby, New York, and A. O. Elzner, Cincinnati.

Committee on Schools of Architecture—H. Langford Warren, chairman, Boston; Clarence A. Martin, Ithaca; Warren P. Laird, Philadelphia; N. Clifford Ricker, Urbana, Ill.; F. W. Chandler, Boston, and A. D. F. Hamlin, New York.

Committee on Metric System—L. De Coppet Bergh, chairman, New York; J. P. Putnam, Boston; James Knox Taylor, Washington, D. C.; W. M. Ellicott, Baltimore, and Wilfred W. Beach, Sioux City, Iowa.

Delegate, Electrical Code and Fire Protection—Alfred Stone, Providence, R. I.

ASSOCIATION NOTES.

PITTSBURG CHAPTER A. I. A.

The chapter distributed $300 in prizes on March 3d among the students who made the best showing in the competition that has been in progress since last October. The drawings were displayed in the architectural rooms of the Carnegie Technical Schools.

MILWAUKEE ARCHITECTURAL CLUB.

T. L. Rose has been elected president of the club. The other officers follow: Vice-president, E. O. Kuenzli, secretary, H. A. Betts; treasurer, John Menge Jr.; director for three years, H. P. Schnetzky; director for two years, Cornelius Leenhouts; director for one year, Armand D. Koch.

SOUTHERN CALIFORNIA CHAPTER A. I. A.

At the monthly meeting and dinner of the chapter the subject of the building headquarters for the chapter was brought up by John P. Krempel and President A. F. Rosenheim appointed a committee consisting of Mr. Krempel, Octavius Morgan and John Parkinson to take charge of the project. Already $3,000 has been pledged.

TWIN CITY ARCHITECTURAL CLUB.

A novel competition has been announced for architects of the city initiated by a local brick company, which offers prizes aggregating $150 for the best papers demonstrating that a brick house may be constructed as cheaply as a frame residence. The following officers were chosen: President, Cecil Bayless Chapman; vice-presidents, H. T. Downs and Hugo Arnold; secretary, A. R. Van Dyck; treasurer, J. A. Stone Jr.; directors, H. H. Eads and George A. Blewett.

NEW YORK CHAPTER, A. I. A.

A letter was addressed to the chairman of the committee of buildings of the board of aldermen by the presidents of the various architectural societies in New York. It was discussed by the chapter and was the sense of the meeting that each member of the chapter be requested to communicate with his alderman and urge a modification of the composition of the commission to revise the building code along the lines suggested. The letter is as follows: In regard to the proposed revision of the building code, we, the undersigned, presidents of the various architectural societies in this city, are of the opinion that while it is highly necessary and of the very first importance that the present code should be revised, we are also of the opinion that any revision, in order to be effective, should be thorough and scientific and undertaken by a commission of broad-minded, highly trained experts. The composition of the commission as proposed in the resolution that has lately been before your honorable body is not such, we think, as would tend to successfully accomplish the ends we have in view, and we would respectfully submit to you a request that the commission be remodeled and that it be composed as follows, of: Three architects, two engineers—one civil and one mechanical, two members of the Master Builders' Employers' Association, one representative from the Bureau of Buildings, one lawyer (preferably a representative of the corporation counsel's office, who has to do with the interpretation of the building law). Unless a thorough revision of the code undertaken by such a commission as we propose can be provided

for, we are of the opinion that the code, as it is in its present state, had best be permitted to stand. Very truly yours, George B. Post, president of the New York Chapter of the American Institute of Architects; R. H. Hunt, president of the Architectural League of New York; Whitney Warren, president of the Beaux Arts Society; A. A. Stoughton, president of the Architectural Society of Columbia University.

CHICAGO ARCHITECTURAL CLUB.

There was a large attendance at the meeting of March 12. The attraction was a lecture by George W. Maher on "The Western Spirit." The speaker advocated developing each design from the leading characteristics of the client, instead of from precedent. He finds that in this way the client feels a personal interest throughout the work and is completely satisfied with the resultant building.

PORTLAND ASSOCIATION OF ARCHITECTS.

At the last meeting of the Portland Association of Architects the following officers were elected for the ensuing year: President, Joseph Jacobberger; vice-president, Emil Schacht; treasurer, Edgar M. Lazarus; secretary, Otto Kleemann; trustee, C. C. Robbins. The newly elected treasurer, E. M. Lazarus, entertained the members of the association at an informal dinner. The association has done a great deal in the last three years in the interest of good building and honest and honorable business practices, and enforcement of existing laws.

THE ARCHITECTURAL LEAGUE OF AMERICA.

The League has organized with the following executive board and chairmen: Executive board: President, Ernest J. Russell; vice-president, Frederick M. Mann; corresponding secretary, Wm. B. Ittner; recording secretary, Ernest Helfensteller Jr.; treasurer, John C. Stephens; Samuel L. Sherer, Jesse N. Watson. Chairmen of Committees: Publicity and Promotion—John Molitor, Philadelphia; Current Club Work—J. P. Hynes, Toronto; Education—Newton A. Wells, Urbana, Ill.; Co-operation with the Institute—Wm. B. Ittner, St. Louis; Civic Improvement—Frederick S. Lamb; Foreign Scholarship—N. Max Dunning, Chicago.

SOCIETY OF BEAUX-ARTS ARCHITECTS.

At the dinner of the Society of Beaux Architects in New York, February 20th, it was announced that Mr. Cornelius Vanderbilt had "invited" Mr. Henry Hornbostel on behalf of the society to travel through Europe next summer and study the artistic treatment of civil engineering works. Mr. Hornbostel will make a report to the society. "Then," remarked one of the guests, after the applause had subsided, "we will have geraniums in the subway." At this there was a general laugh, Mr. William Barclay Parsons, formerly chief engineer of the subway and a guest at the dinner, joining in. In fact, the dinner was a jolly affair, Mr. Louis Metcalfe made up as Liszt, conducted an orchestra composed of members of the society. Among other things it played the famous atelier song:

On dit quelque fois au village
Les casques ne valent a rien du tout,

the whole company of three hundred or more taking up the air. The members were seated in groups arranged according to the "patrons" of the Beaux Arts in whose ateliers they had studied—Daumet, Blondel, Pascal and others. Mr. Whitney Warren presided. Among those at the dinner were Professors Weir, of Yale; Laird and Crèt, of the University of Pennsylvania; Martin, of Cornell; Spiering, of St. Louis; Despradelle, of Boston, and Hooper, of Brooklyn, and Messrs. Frank Miles Day, W. W. Bosworth, Austin W. Lord, Ernest Flagg, J. H. Freedlander, Grosvenor Atterbury, S. B. P. Trowbridge, Walter Cook, Richard Walker and John M. Carrère.

ILLINOIS CHAPTER, A. I. A.

The regular monthly meeting of the chapter was held on March 12 at 6 p. m. After the usual dinner action was taken on several important subjects. It was voted to send to Congress on behalf of the chapter the request that works of art be admitted duty free. The committee on revision of the building code was instructed to advocate that no projections be allowed beyond the lot line except for courses and cornices. The proposed amendment to the city ordinance, by which architects were required to pay a license fee of $50 annually, was discussed. It was decided that as the architects were already subject to the State law requiring a license the city could not demand another license. The frequent and annoying hindrances to building work due to conflicting claims by rival labor unions of the right to do certain work were considered and a motion passed that a committee be appointed to offer the services of the architects in the forming of a jury to decide such disputes without the stoppage of work. An address was delivered by W. B. Mundie on "The Competition Code." The discussion that followed will be useful to Mr. Mundie in formulating the attitude of the chapter on this subject, and reporting to the Institute committee on competitions at their meeting in April.

NEW PUBLICATIONS.

PROCEEDINGS OF THE AMERICAN FOREST CONGRESS, held at Washington, D. C., January 2 to 6, 1905, under the auspices of the American Forestry Association. Published for the Association by the H. M. Suter Publishing Company, Washington, D. C.

Few associations publish their proceedings in such permanent, convenient and attractive form as does the American Forestry Association. This report is in book form, cloth bound, and numbers 474 pages. It would be difficult to imagine a more comprehensive collection of papers on a subject than is presented in this work by an imposing array of authorities. Every phase of the subject is treated by a specialist. The subject of Forestry is of interest to so many classes that the book is destined to have a wide circulation.

STANDARD TELEPHONE WIRING for Common Battery and Magneto Systems. A Hand-Book for Telephone Men, containing Diagrams of Circuits for Straight Lines, Party Lines, Plans, Sub-Stations, Private Lines and Inter-communicating Systems, with a Brief Description of the Apparatus Used and Rules of the Fire Underwriters. Illustrated. By James F. Fairman. Published by McGraw Publishing Company, New York. Price, $1.00.

In these days of the rapid development of electrical science those who have to do with the equipment of buildings will find such a book as this an important aid to keep informed on advanced modern practice. The book gives simple instructions for the connection of the various kinds of apparatus to the common battery and to magneto systems. The connections are shown by lettered diagrams. It is in pocket size and bound in leather.

MODERN MACHINE SHOP. Construction, Equipment and Management. By Oscar E. Perrigo, M. E., Member American Society of Mechanical Engineers, Expert in Machine Shop and Factory Organization, Modern Shop Methods, Time and Cost Systems. Illustrated by over two hundred specially made engravings by the author. Published by the Norman W. Henley Publishing Company, New York, 1906. Price, $5.00.

This is a comprehensive and practical treatise on the economical building, the efficient equipment and successful management of the modern machine shop or manufacturing plant. It describes and illustrates a remarkably simple and efficient time and cost system. It is peculiarly adapted for the every-day use of architects, manufacturers, engineers and superintendents who have to plan and equip the modern manufacturing plant. The book numbers 344 pages; the illustrations are by the wax process, the best form of reproduction for such drawings, and the typography is of unusual excellence.

OBITUARY.

THE death is announced of Frederick Tallmadge Towne, younger son of Henry R. Towne, and general superintendent of the Yale & Towne Manufacturing Company. While Mr. Towne contended with a serious disease, his death came suddenly at his home in Stamford, Conn., at the age of thirty-four. His education was such as to thoroughly fit him to conduct the company's large manufacturing plant. His intelligent consideration for his employes had much to do with the *esprit de corps* which prevailed at the works.

SELECTING HARDWARE.*

WHILE the argument thus advanced concerning the relations of Architect and Client has had reference chiefly to questions of art and decoration, it applies with almost equal force to questions of utility. American hardware has become a very complex and comprehensive product, in which a vast amount of the traditional "Yankee ingenuity" has been embodied, and an intelligent understanding of its scope, varieties and uses is beyond the knowledge of the normal client, but of course is, or should be, included in that of his architect. The responsibility rests on the latter, therefore, of acting for or guiding the former in the selection of such hardware as, within the limit of proper cost, will afford the highest protection and convenience, as well as contribute most effectively to the scheme of decoration.

No other material entering into the construction of a building will pay a larger return, in satisfaction, comfort and permanent economy, for time and care devoted to its selection than the "Finishing Hardware," but until lately none has had less consideration. The range of choice and quality has become too great, however, for the selection of builder's hardware any longer to be left to the general contractor under an omnibus specification, and the practice is fast becoming universal of according to it the benefit of careful and discriminating selection, by the architect or the client, or by both in consultation. And this holds good as to the many mechanical questions involved, as well as to those which relate purely to decorative effects; in both the architect's judgment, based on fuller technical knowledge, must be qualified by the client's preference and taste, or by the limit of cost which he imposes, excepting those cases, unfortunately rare, in which the architect is given *carte blanche* to do what he thinks best.

Hardware has become a factor, and an important one if well handled, in the interior ornament of the modern building, and its selection demands at least equal care with that given to other elements of interior decoration, such as lighting and mantel fixtures, wall papers, hangings, etc., all of which have always been the object of personal selection by architect or client, and are never merged in the general contract for construction.

The method which should be employed in all these matters depends primarily on the conditions. If the building in question is intended for sale or renting, or if *cheapness* is the dominant factor, then a competitive method may be expedient; but if the client intends it for personal occupancy or for permanent ownership, then the competitive method may, and usually is, a poor one whereby to secure the best result. The desirable method in *all* cases is that a preliminary examination should be made, before any final decisions are reached, in order that both architect and client may have an intelligent general knowledge of the subject and of the range, in quality and prices, of the material available for selection. This accomplished, a decision can then be made as to the *grade* of hardware to be used in the various parts of the building, and this decision will greatly simplify all the rest of the work. Broadly speaking, finishing hardware divides into three grades, viz.: Cheap, medium and fine, and by deciding upon one of these the process of selection in any case is greatly facilitated by the resulting elimination of all articles outside of the grade selected.

Whatever the method used, or the grade selected, preference can safely be given, in all cases, to the product of a manufacturer of known experience and established reputation. No matter how great the care and intelligence devoted to personal selection, the choice is limited absolutely to what the manufacturers see fit to provide, and is larger, of course, in proportion to the extent and variety of the line made by each. Where one manufacturer fully covers the whole field, and especially where his product is of known reliability and wide range, it is usually found advantageous to use the same make of goods throughout the building rather than to select goods of different makes, and this practice increasingly obtains. The contrary practice tends to confusion and errors, to lack of harmony in style and in finishes, and to a division of responsibility which is undesirable.

*An article forming part of "A Treatise on Locks and Builders' Hardware," by Henry R. Towne, president of the Yale & Towne Manufacturing Company, and past president of the American Society of Mechanical Engineers. John Wiley & Sons, publishers. Price, $3.00. It is the intention of the publishers of the Inland Architect to publish other selections from this work. The book is profusely illustrated and contains more than 1,100 pages. 4x6½ inches.

OUR ILLUSTRATIONS.

Residence, Chicago. S. S. Beman, architect.

Residence, Chicago. Pond & Pond, architects.

Residence for Henry Ashley, Kansas City. Frank Jackson, architect.

St. Luke's Hospital, St. Louis, Mo., Theo. C. Link, architect, Exterior and plans.

The Elms hotel, Hyde Park, Chicago. Borst & Hetherington, architects. Exterior and interior are given.

Apartment building, Chicago. H. H. Waterman, architect. Exterior and an interesting court view are shown.

Residence of D. M. Lord, Chicago. Mann, MacNeille & Lindeberg, architects, New York. The following views are presented: Exterior, view of library, view in dining room.

Accepted Competition Design, Cathedral for the Archepiscopal see of St. Louis, state of Missouri. Barnett, Haynes & Barnett, architects. Elevations, plans and section are given.

The George Washington University buildings, latest approved designs, Washington, D. C. Geo. B. Post & Sons, architects, New York. This academic group will include, in addition to the Memorial building, to be erected by the George Washington Memorial Association, a hall of history, containing the library; a hall of politics and diplomacy, the Corcoran Hall of Philosophy, the hall of physics, the hall of chemistry, and the alumni hall. These buildings are so disposed as to give particularly interesting facades toward both the President's park and the Potomac park, and at the same time yield a large internal campus. The placing of the Memorial building, which includes the offices of administration, on the corner of Seventeenth and B streets, facing the Washington monument, gives a particularly pleasing corner, one which will serve as the head or focal point not only of the Van Ness group of buildings, but also of the possible additions thereto, which in the future may be thought necessary. The plans have been made upon a basis of expenditure of $20,000,000, and with the enlarged purposes of the institution as a graduate institution, looking to the gradual affiliation of many colleges like those of Oxford, it is thought by the governing board that the buildings must be monumental in character.

Majestic Theater building, Chicago, Edmund R. Krause, architect. Exterior and interior views are shown. The building is nineteen stories high; the facade is of cream white enameled terra cotta, highly ornamented. For further description see pages III and IV, this number.

The Majestic is the first theater built under Chicago's latest ordinances governing such construction. Not only have these laws been strictly followed, but a large additional provision for safety has been made. The auditorium floor is formed of concrete arches resting upon steel floor beams. The cantilever form of construction is used for the galleries and balconies. The cantilever girders in the construction of the galleries are suspended from a roof truss by strong steel tension rods. This gives uninterrupted view in the balcony below. This gallery has additional exits through three tunnels, which have direct outer exits through an independent corridor, which has also a stairway down to the alley. Both the floor and roof of attic over the auditorium are of tile arch construction and the trusses are covered with tile and concrete.

The heating and ventilating of the theater is by the mechanical system. The fresh air inlet is at the top of the building. The air is drawn over tempering coils and through a washer and eliminator; it then passes over heating coils into the plenum chamber. An exhaust system of ventilation is located in the attic. The building is provided with an exhaust cleaning system. The stage is 75 feet wide and 36 feet deep, and the walls, which are three feet thick, are carried to a height of 78 feet to a steel gridiron. Twelve feet above the gridiron and over the center of the stage, is a ventilator sixteen feet square, automatically controlled. Special provision is made to insure the smooth and ready action of the steel fireproof curtain. A sprinkler system is installed. Thus it will be seen that everything conducive to safety and comfort has been provided throughout the Majestic building.

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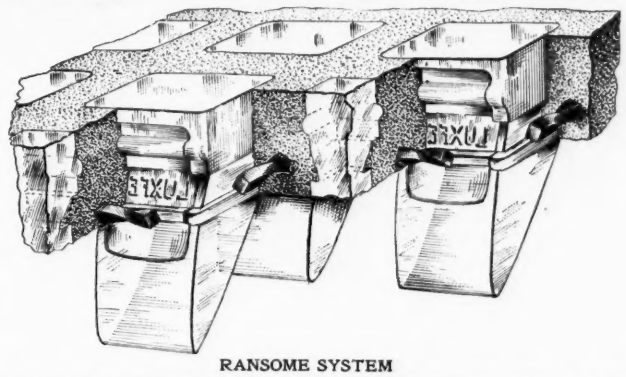

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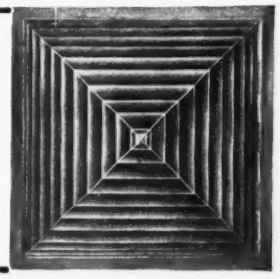

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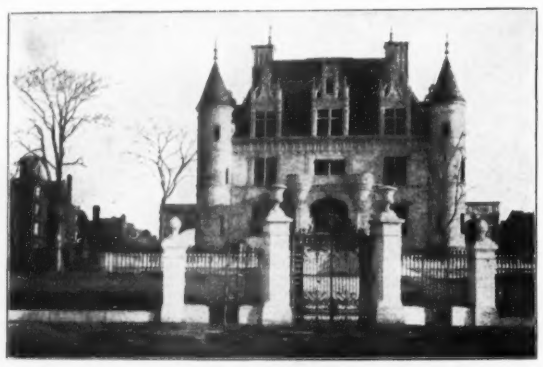

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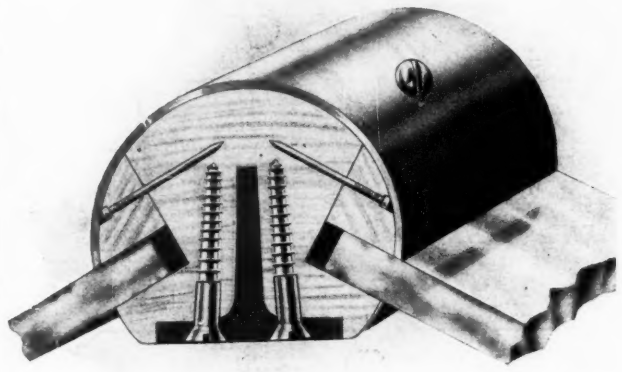

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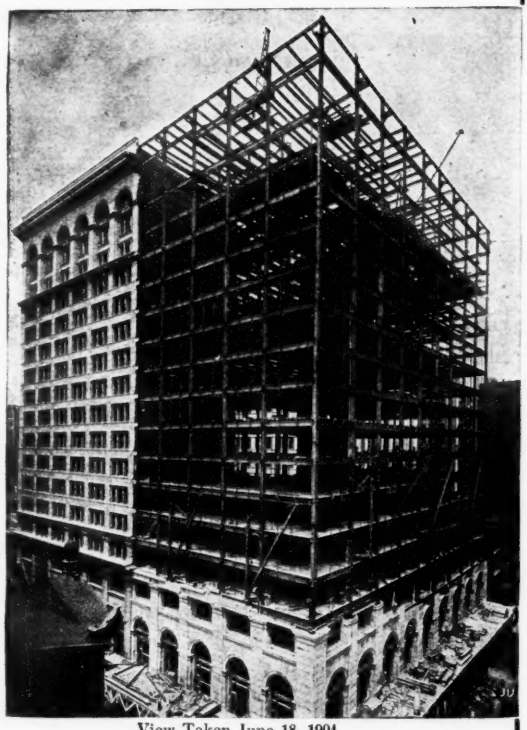

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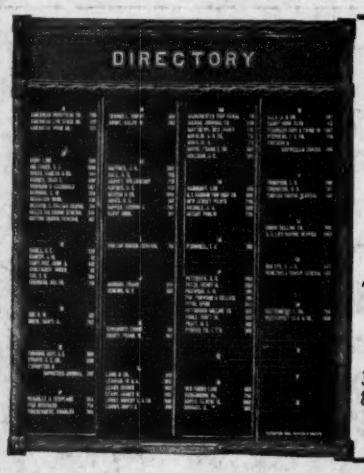

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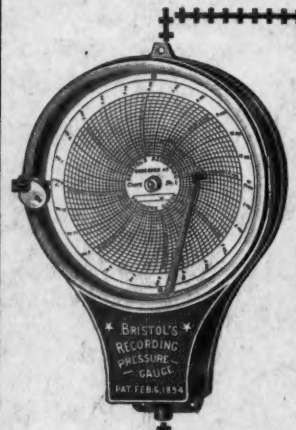

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